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STATE OF SOUTH CAROLINA
IN THE
SUPREME COURT

S.C. SUPREME COURT

Appeal from the Administrative Law Court
Honorable Ralph King Anderson, III, Administrative Law Judge
Case No. 04-ALC-07-0126-CC

*South Carolina Court of Appeals
414 S.C. 581, 779 S.E.2d 809 (Ct.App. 2015)*

Sierra Club,

Respondent,

v.

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

Defendants,

Of whom Chem-Nuclear Systems, LLC, is the

Petitioner,

and South Carolina Department of Health and
Environmental Control is,

Respondent.

**BRIEF ON CERTIORARI OF THE
PETITIONER, CHEM-NUCLEAR SYSTEMS, LLC,**

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I. QUESTIONS PRESENTED ON CERTIORARI

- A. Whether The Court of Appeals Misapprehended/Overlooked Chem-Nuclear's Compliance With The ALC's Directive In The 2005 ALC Order To Conduct Further Studies To Address Concerns Regarding Reducing Contact Between Rainfall And Waste?
- B. Whether The Court of Appeals Misapprehended/Overlooked The Purpose of Subpart 7.11 – “Conditions Of License” In Concluding That Subpart 7.11 Imposed Technical Requirements As Noted In Subpart 7.1.3 Rather Than “Burial Operation Conditions” As Noted On License 097?
- C. Whether The Court of Appeals Misapprehended/Overlooked The Standard For Determining Compliance With Subpart 7.11 In Chem-Nuclear I By Excluding Both Other Result-Based Evidence Unrelated To ALARA And Design Features Which Did Not Eliminate Contact With Rainfall?
- D. Whether The Court of Appeals Misapprehended/Overlooked The Barnwell Facility's Natural Physical Attributes Analyzed Under Subpart 7.7, Which Includes Extensive Groundwater Pathways And Travel Time Allowing For Significant Reduction In Tritium Radiation Content Prior To Any Potential For Release?
- E. Whether Public Policy and Legal Considerations Mandate Deference To SCDHEC In Interpreting The Requirements Of Subpart 7.11, Since SCDHEC Has The Technical Expertise And Experience To Balance The Numerous And Potentially Competing Considerations In 24A S.C. Code Ann. Reg. § 61-63 Which The Judiciary May Lack?
- F. Did the Court of Appeals Erroneously Shift the Burden of Proof to Chem-Nuclear By Holding Substantial Evidence Did Not Support a Finding that Chem-Nuclear was in Compliance with 24A S.C. Code Ann. Reg. § 61-63 (2011 & Supp. 2017)?

II. STATEMENT OF THE CASE

This matter arises on remand from a contested case hearing challenging the Respondent, South Carolina Dept. of Health & Environmental Control's ("SCDHEC"), issuance of a renewal license to Chem-Nuclear authorizing the operation of the Low Level Radioactive Waste Disposal Facility in Barnwell County (the "Barnwell Facility"). (App.2, 327). Shortly after Chem-Nuclear's license was reissued in March 2004 (App.2, 327), Sierra Club filed a request for a contested case with the Administrative Law Court. (App.327, 394). The ALC held the hearing on 16-18, 25 February 2005. (App.363). On 13 October 2005, the ALC affirmed renewal of the license (App.392), but directed Chem-Nuclear to conduct studies "to evaluate the scientific and economic feasibility of employing or implementing designs and operation procedures at the Barnwell Site" (App.390) to reduce contact between waste in open trenches and rainfall (the "2005 ALC Order").¹

Chem-Nuclear complied with this directive, performed the specified studies, and submitted the results to SCDHEC on 7 April 2006. (App.327-328 n.2). Chem-Nuclear considered whether (a) disposal trenches could be sheltered with roofs; (b) waste could be stored, temporarily, in dry storage facilities prior to disposal; and (c) disposal vaults could be sealed and grouted. As to items (a) and (c), Chem-Nuclear concluded, and SCDHEC concurred (App.327-328 n.2), that the dose of radiation to institutional workers for implementing these measures would exceed any potential environmental benefit. SCDHEC noted that the "collective population dose savings at the compliance point . . . is 8.4 person-millirem for the hypothetical population of 100 people. The radiation exposure to workers

¹ Sierra Club v. SCDHEC and Chem-Nuclear Systems, LLC, Docket No. 04-ALJ-07-0126-CC, 2005 WL 2997193.

would be significantly more than this hypothetical dose.” While the exposure to institutional workers is clearly a reality, the exposure to the public is entirely hypothetical as there is no access to the compliance point where tritium concentrations are measured and monitored. (App.40, 42, 44). As to item (b), Chem-Nuclear developed CNS Procedure S20-OP-051, *Temporary Storage of Waste*, acknowledged by SCDHEC in the same letter. No further administrative action was taken or warranted, as the ALC had not required a remand to SCDHEC.

Sierra Club appealed the 2005 ALC Order to the Court of Appeals. (App.352). On 10 March 2010, the Court of Appeals issued its first opinion (App.352-361),² affirming in part and remanding in part the 2005 ALC Order. (App.360-361). Importantly, the Court of Appeals limited the ALC’s review on remand solely to consideration of the 2005 ALC Order’s factual findings³ (App.360-361) which, in turn eliminated the ALC’s ability to consider the study mandated by the 2005 ALC Order which Chem-Nuclear subsequently prepared and presented to SCDHEC.⁴ Also material in Chem-Nuclear I was the Court of Appeals’ conclusion regarding the means and methods for Chem-Nuclear to comply with 24A S. C. Code Ann. Reg. 61-63 Part 7.11’s requirements. (App.358). The Court of Appeals stated:

² Sierra Club v. DHEC and Chem-Nuclear, 387 S.C. 424, 693 S.E.2d 13 (Ct.App. 2010), *certiorari denied* (21 July 2011) (“Chem-Nuclear I”).

³ On remand, we instruct the ALC that [S]ections 7.11 and 7.23.6 impose additional compliance requirements for Chem-Nuclear and further instruct the ALC to apply its factual findings to these sections of [R]egulation 61-63.” (App.360-361). *See also* Chem-Nuclear I, 387 S.C. 424, 432, 693 S.E.2d 13, 20.

⁴ The required study resulted in a report entitled Evaluation of the Scientific and Economic Feasibility for implementing new Designs and Operational Procedures at the Barnwell Site as Directed by the South Carolina Administrative Law Court Order Dated October 13, 2005. (the “Feasibility Report”). *See* Sierra Club v. South Carolina Dept. of Health & Env’tl. Control, 2005 WL 2997193, *22. (App.391, para. 17).

We remand the issue to the ALC and instruct it to apply its factual findings to the technical requirements of these regulations. Specifically, we believe that [Subpart] 7.11 imposes additional compliance requirements for Chem-Nuclear such that the balancing test of ALARA would not be sufficient to address whether Chem-Nuclear is in compliance with section 7.11.⁵

In the subsequent *Final Order and Decision on Remand* (the "2012 ALC Order") (App.327-348), the ALC applied "the factual findings from its 2005 [ALC] Order." (App.328).⁶ The ALC adhered to the remand directive and made express findings related to measures Chem-Nuclear has undertaken to minimize the migration of water onto the disposal units, out of the disposal units, to provide for detection of water in disposal units, and to collect and retain water to allow for detection and remediation of contamination. (App.328-348). The ALC expressly enumerated the measures taken to "minimize" exposure between waste and water, within the constraints of reliance on the factual findings in the 2005 ALC Order. (App.328-348). Importantly, and as noted in Chem-Nuclear I, there were no findings in the 2005 ALC Order relating to Chem-Nuclear's compliance with Subpart 7.11.11 (App.362-392)⁷ because compliance with that Part wasn't expressly raised until the Sierra Club filed its post-trial Motion for Reconsideration.⁸

⁵ Chem-Nuclear I, 387 S.C. 424, 435, 693 S.E.2d 13, 18-19.

⁶ See Sierra Club v. South Carolina Dept. of Health & Env'tl. Control, Docket No. 04-ALJ-07-0126-CC. (App.327-348).

⁷ See Sierra Club v. South Carolina Dept. of Health & Env'tl. Control, 2005 WL 2997193, **2-22.

⁸ "In its motion for reconsideration, the Sierra Club specifically mentioned sections 7.11 and 7.23.6 of [R]egulation 61-63 and argued Chem-Nuclear's current disposal practices [were] not in compliance with these sections. The ALC did not specifically rule on the Sierra Club's motion[,] but generally denied their motion for reconsideration." Chem-Nuclear I, 387 S.C. 424, 430, 693 S.E.2d 13, 16.

The Sierra Club appealed the 2012 ALC Order to the Court of Appeals.⁹ Sierra Club argued, for the first time in this protracted process, that the requirements of Subpart 7.11.11 for “minimization” of contact between water and waste actually required that no water be allowed to come into contact with waste. (App.305-315). Importantly, both the Sierra Club (and the Court of Appeals) ignored multiple applicable regulatory requirements contained in 24A S.C. Code Ann. Reg. 61-63 which are intended to be read in concert.¹⁰

Operations at the Barnwell facility are entirely consistent with these requirements which make clear that minimization does not mean and in practicality, cannot reasonably be interpreted to mean, the total prevention of contact between waste and water – groundwater or rainwater. In the 2012 ALC Order, the ALC relies extensively on the “ERPV”¹¹, a predictive model which considered the movement of radionuclides in groundwater from the facility to the compliance point. As noted in the 2005 ALC Order, “[w]hile the maximum measured tritium concentration, measured on July 18, 2001, results in a hypothetical dose of 5.7 *mrem* at the compliance point, the maximum predicted tritium concentration, based on the ERPV, would result in a dose of 13 *mrem* per year at the

⁹ See Sierra Club v. South Carolina Dept. of Health & Env'tl. Control, 414 S.C. 581, 587, 779 S.E.2d 805, 808.

¹⁰ For example, 24A S.C. Code Ann. Reg. 61-63, Part 7.22 establishes “Disposal Site Suitability Requirements for Land Disposal,” Part 7.22 addresses “near surface disposal” which describes operations at the Barnwell facility. Part 7.22.16 provides as follows: “The disposal site shall provide sufficient depth to the water table that groundwater intrusion, perennial or otherwise, into the waste will not occur. [SCDHEC] will consider an exception to this requirement to allow disposal below the water table if it can be conclusively shown that disposal site characteristics will result in molecular diffusion being the predominant means of radionuclide movement and the rate of movement will result in the performance objectives being met.” (Emphasis added).

¹¹ “ERPV” is an acronym for Environmental Radiological Performance Verification. See Sierra Club v. South Carolina Dept. of Health & Env'tl. Control, Docket No. 04-ALJ-07-0126-CC. (App.330 fn.8).

compliance point.”¹² Readings of 13 *mrem*, and 5.7 *mrem* are both well below the regulatory limit for exposures which is an annual dose of 25 *mrem* to the whole body.¹³ The assessment and modeling embodied in the ERPV to determine regulatory compliance includes consideration of groundwater travel time and radioactive decay rates consistent with the exception provided for in Subpart 7.22.16.¹⁴ The regulatory framework would not need to consider these factors if the required engineered barriers were intended to **prevent all contact** between waste and water.

The Court of Appeals issued *Chem-Nuclear II* on 30 July 2014,¹⁵ after which both SCDHEC and Chem-Nuclear both successfully sought rehearing.¹⁶ The Court of Appeals withdrew the original decision and refiled another one on 12 August 2015.¹⁷ Unfortunately, the substituted *Chem-Nuclear II* opinion failed to address Chem-Nuclear’s multiple concerns related to the Court of Appeals’ interpretation of the requirements set forth in 24A S.C. Code

¹² *Sierra Club v. South Carolina Dept. of Health and Env’tl. Control*, 2005 WL 2997193, *11 (Findings Nos. 60-66) (Appx. 375-376).

¹³ See 24A S.C. Code Ann. Regs. 61-63, Subpart 7.18.

¹⁴ For example, if disposal means that there can be absolutely no contact between waste and water, then 24A S.C. Code Ann. Regs. § 61-63, Subpart 7.18 would not allow for a dose rate below which concentrations of radioactive material released to the general environment (including, air, groundwater, surface water, soil) is allowable, and 24A S.C. Code Ann. Regs. § 61-63, Subpart 7.20 would not provide that radiation exposure to workers during site operations should be “as low as reasonably achievable.” Consequently, waste isolation, in the context of the regulatory provisions’ plain language, does not contemplate preventing or quarantining all waste from contact with water.

¹⁵ *Sierra Club v. South Carolina Dept. of Health and Env’tl. Control*, 2014 WL 3734366 (Ct.App., filed 30 July 2014), *opinion withdrawn and superseded by*, 414 S.C. 581, 779 S.E.2d 805 (Ct.App. 2015), *certiorari granted* (26 October 2017) (“*Chem-Nuclear II*”).

¹⁶ *Chem-Nuclear II*, 414 S.C. 581, 587, 779 S.E.2d 805, 808.

¹⁷ *Chem-Nuclear II*, 414 S.C. 581, 587, 779 S.E.2d 805, 808.

Ann Reg. 61-63.**18** To the contrary, the Court of Appeals adopted the Sierra Club’s position that the regulatory framework, and particularly Subpart 7.11, required Chem-Nuclear to prevent **any contact** between water and waste by “ ‘shelter[ing] [*i.e.*; roofing] the disposal trenches from rainfall’ ” and “ ‘sealing and grouting the concrete disposal vaults to prevent the intrusion of water.’ ”**19** The Court of Appeals noted, albeit incorrectly, that “[w]hen pressed at oral argument to list what Chem-Nuclear ha[d] done to reduce rainfall onto active disposal units, neither Chem-Nuclear nor SCDHEC could name one action Chem-Nuclear took, except to construct berms along the edges of trenches.”**20** In fact, Chem-Nuclear and the 2012 ALC Order listed multiple actions intended to achieve compliance with Subpart 7.11.11. (App.338-345)

In Chem-Nuclear II, the Court of Appeals significantly enlarged its original holding from Chem-Nuclear I which stated “that [Subpart] 7.11 impose[d] additional compliance requirements for Chem-Nuclear such that the balancing test of ALARA would not be sufficient to address whether Chem-Nuclear is in compliance with Part 7.11.”**21** In Chem-

18 Chem-Nuclear II, 414 S.C. 581, 779 S.E.2d 805.

19 Chem-Nuclear II, 414 S.C. 581, 605, 779 S.E.2d 805, 817 (*quoting* Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, 2005 WL 2997193, *22 (Internal alteration in original). (App.390).

20 Chem-Nuclear II, 414 S.C. 581, 603, 779 S.E.2d 805, 816.

21 Chem-Nuclear I, 387 S.C. 424, 435, 693 S.E.2d 13, 19. ALARA is an acronym for the phrase “as low as is reasonably achievable”. See Chem-Nuclear II, 414 S.C. 581, 594, 779 S.E.2d 805, 811; Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, 2005 WL 2997193, *16. “Reasonable efforts should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable” See 24A S.C. Code Ann. Regs. 61-63, Subpart 7.18; Chem-Nuclear I, 387 S.C. 424, 429, 693 S.E.2d 13, 15; Chem-Nuclear II, 414 S.C. 581, 594, 779 S.E.2d 805, 811. Additionally, “[t]he regulatory definition of ALARA also weighs ‘the economics of improvements in relation to benefits to the public health and safety.’ ” Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, 2005 WL 2997193, *17. In the 2005 ALC Order, the ALC concluded that:

Nuclear II, the Court of Appeals concluded those “additional compliance requirements” must be comprised of Chem-Nuclear’s specific actions taken to satisfy Subpart 7.11.11, rather than actions which satisfy other requirements and which, in turn, support compliance with Subpart 7.11.11.**22** Moreover, the Court of Appeals makes clear that Subpart 7.11.11’s “minimization” requirements mandated roofing trenches, sealed vaults, and a leachate collection system.**23**

The most problematic conclusion in Chem-Nuclear II is the Court of Appeals’ abject rejection of ALARA requirements when considering disposal operations. In Chem-Nuclear I, the Court of Appeals simply rejected ALARA as the sole basis for compliance with Subpart 7.11.11. In Chem-Nuclear II, the Court of Appeals effectively has hamstrung Chem-Nuclear in protecting workers from a potentially increased radiological exposure.**24**

ALARA is defined in 24 A S.C. Code Ann. Regs. 61-63, Subpart 3.2.6 as:

. . . making every reasonable effort to maintain exposures to radiation as far below the dose limits in this part as is practical consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology , the economics of improvements in

There is no evidence in the record demonstrating that the alternative disposal or storage methods proposed by [Sierra Club] satisfy this calculus. There is no performance data available on the ‘assured isolation storage facilities’ or ‘above-ground disposal facilities’ recommended by [Sierra Club], as such facilities have not been constructed in the United States. . . . Further, [Sierra Club] did not offer any evidentiary support to establish the economic viability of these alternate disposal methodologies.

Sierra Club v. South Carolina Dept. of Health and Envtl. Control, 2005 WL 2997193, *17.

22 Chem-Nuclear II, 414 S.C. 581, 594, 600, 779 S.E.2d 805, 811, 814-815.

23 Chem-Nuclear II, 414 S.C. 581, 600-611, 779 S.E.2d 805, 814-820.

24 The Court of Appeals stated “[i]n determining compliance with the technical requirements of [Subpart] 7.11.11.4, however, we consider the action taken by Chem-Nuclear to comply, not the reasons why it decided not to implement a certain measure based on its own ALARA analysis.” Chem-Nuclear II, 414 S.C. 581, 613 fn.18, 779 S.E.2d 805, 821, fn.18.

relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and license materials in the public interest.

Chem-Nuclear is subject to dose limits, including limits for the members of the public and occupational dose limits.²⁵ Nevertheless, in addition to the regulatory limit, Chem-Nuclear is also required to address ALARA and insure that the occupational exposure is “as low as is reasonably achievable”. The Court of Appeals, however, clearly intends Chem-Nuclear to undertake measures to prevent all water from entering open trenches and coming into contact with waste without any consideration of the impact that might have on occupational (worker) exposure.²⁶

Absent this Supreme Court intercession, Court of Appeals’ opinion requires Chem-Nuclear to comply with Subpart 7.11.11 without regard to the ALARA analysis which, as this Supreme Court is aware, includes a myriad of considerations and should guide all decisions as to operation and design. The Court of Appeals’ analysis dictates (a) the installation of roofs over active trenches, (b) a liner to collect leachate within the trenches, and (c) the grouting and sealing of vaults.²⁷ Contrary to the Court of Appeals’ theoretical safety premise, the installation of a liner and the grouting and sealing of vaults results in rainwater collection, rather than dispersion, and, in violation of ALARA, may increase the potential for worker exposure. The installation of a roof over a vast disposal trench, again an ALARA violation, may also increase the potential for occupational exposure.

²⁵ See 24A S.C. Code Ann. Regs. 61-63, Part III.

²⁶ Chem-Nuclear II, 414 S.C. 581, 613, fn.18, 779 S.E.2d 805, 821-822, fn.18.

²⁷ Chem-Nuclear II, 414 S.C. 581, 601-613, 779 S.E.2d 805, 815-822.

While Chem-Nuclear has assessed these measures, it is critical that any assessment of Chem-Nuclear's compliance with Subpart 7.11.11's requirements necessarily include consideration as to whether both hypothetical doses of radiation to the general public and occupational doses comply with ALARA. The Court of Appeals' opinion forecloses any such consideration if that decision remains the law governing the application of 24A S.C. Code Ann. Regs. 61-63.

This Supreme Court must rectify this interpretative error and permit ALARA to retain its significance.

III. ARGUMENT AND CITATION OF AUTHORITY

A. The Court of Appeals Misapprehended/Overlooked Chem-Nuclear's Compliance With The ALC's Directive In The 2005 ALC Order To Conduct Further Studies To Address Concerns Regarding Reducing Contact Between Rainfall And Waste.

The 2005 ALC Order was a favorable outcome for Chem-Nuclear and for SCDHEC since the ALC concluded the Sierra Club "did not provide the [ALC] with concrete, competent evidence to demonstrate that the disposal methods permitted under License No. 097 fail to satisfy such regulatory requirements. . . ." (App.391).²⁸ On the other hand, the ALC devised a remedy to finalize the discussions between SCDHEC and Chem-Nuclear concerning whether there should be protection of the "open trenches from direct rainfall and runoff such as temporary covers." (App.373, para. 50).²⁹ The ALC directed

²⁸ Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, 2005 WL 2997193, *22.

²⁹ See Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, 2005 WL 2997193, *9. The ALC did not remand the matter to SCDHEC to require temporary or permanent covers as part of the licensing conditions. Instead, the ALC merely sought to "close the loop" on an unfinished conversation, without dictating the outcome. (App.392). See Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, 2005 WL 2997193, *23.

Chem-Nuclear to conduct a study and submit the results to SCDHEC which was done. This study included evaluation of:

the scientific and economic feasibility of employing or implementing designs and operational procedures at the Barnwell Site that will (1) shelter the disposal trenches from rainfall and prevent rainfall from entering the trenches, (2) provide temporary dry storage facilities for the storage of wastes received during wet conditions, and (3) provide for sealing and grouting the concrete disposal vaults to prevent the intrusion of water to the maximum extent feasible.³⁰

Chem-Nuclear complied and sent the eventual Feasibility Report to SCDHEC in April 2006.³¹

In the Feasibility Report Chem-Nuclear analyzed the viability of (a) sheltering the disposal trenches, (b) providing temporary dry storage facilities for the waste,³² and (c) sealing and grouting the concrete vaults.³³ While the Court of Appeals acknowledged the existence of the Feasibility Report, it incorrectly concluded the Feasibility Report required Chem-Nuclear to take further affirmative action. The Feasibility Report, however, demonstrated that Chem-Nuclear's possible installation of a temporary and/or

³⁰ Sierra Club v. South Carolina Dept. of Health & Env'tl. Control, 2005 WL 2997193, *22. (Appx.391, para. 17).

³¹ Chem-Nuclear sought to supplement the appellate record in the Court of Appeals with the Feasibility Report, but the Sierra Club objected and supplementation was denied. Nevertheless, the Court of Appeals specifically acknowledged the study and the Feasibility Report noting "[t]he record does not contain the results of these studies or the reasons [SC]DHEC chose not to amend the license requirements as a result of the [Feasibility] [R]eport." See Chem-Nuclear II, 414 S.C. 581, 621 fn.22, 779 S.E.2d 805, 825 fn.22.

³² Chem-Nuclear concluded temporary dry storage could be provided and had implemented policies for temporary storage of waste packages and for protection of waste packages from inclement weather. SCDHEC acknowledged that Chem-Nuclear put these policies and procedures were in place.

³³ Regarding sheltering of disposal trenches and sealing and grouting concrete disposal vaults, Chem-Nuclear calculated an occupational dose attributable to cover operations. The proposal to grout and seal the vaults also resulted in a worker dose.

permanent roofing structure over the open trenches and/or Chem-Nuclear's grouting and sealing of the vaults seriously conflicted with the requirements of 24A S.C. Code Ann. Reg. § 61-63.³⁴ Chem-Nuclear and SCDHEC correctly concluded Subpart 7.20 required rejection of the proposals to roof and line the trenches and to seal and grout the vaults.³⁵

ALARA obligates Chem-Nuclear not to increase the occupational radiation dose. Consequently, when the ALARA analysis indicates either (a) a likely increased potential occupational radiation dose by using a new disposal and operational design or (b) when the general overall benefit of a new design fails to outweigh the burden of a likely additional radiation dose to institutional workers, then Chem-Nuclear's compliance with ALARA requires Chem-Nuclear to forsake such alleged "improvements". Despite the existence of regulatory limits, Chem-Nuclear cannot simply be satisfied by complying with these limits. Instead, Chem-Nuclear constantly strives to keep any releases and/or exposures "as low as is reasonably achievable".

³⁴ As is noted in 24A S.C. Code Ann. Regs. 61-63, Subpart 7.1.1 "[t]he requirements of this part are in addition to, and not in substitution for, other applicable requirements of these regulations." Additionally, 24A S.C. Code Ann. Regs. 61-63, Subpart 7.20 requires that "[o]perations at the land disposal facility shall be conducted in compliance with the standards for radiation protection set out in Part III of these regulations, except for releases of radioactivity in effluents from the land disposal facility, which shall be governed by [Subpart] 7.18. Every reasonable effort should be made to maintain radiation exposures as low as is reasonably achievable." (Emphasis added). Consequently, the question becomes whether it reasonable to significantly increase worker exposure to radiation when the potential increase in radiation dose to the public is, at best, negligible? The simple answer is "no".

³⁵ "Concentrations of radioactive material which may be released to the general environment in groundwater, surface water, air, soil, plants, or animals shall not result in an annual dose exceeding an equivalent of 25 millirems. . . . to the whole body, 75 millirems . . . to the thyroid, and 2.5 millirems. . . to any other organ of any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as reasonably achievable". 24A S.C. Code Ann. Regs. 61-63, Subpart 7.18. See also Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, 2005 WL 2997193, *7. (App.370, para. 33).

B. The Court of Appeals Misapprehended/Overlooked The Purpose of Subpart 7.11: “Conditions Of License” In Concluding Subpart 7.11 Imposed Technical Requirements Described In Subpart 7.1.3, Rather Than “Burial Operation Conditions” As Noted On License No. 097.

The Court of Appeals’ *Chem-Nuclear I* conclusion that “additional compliance requirements” exist³⁶ was greatly expanded in *Chem-Nuclear II*, to encompass only affirmative acts which would **prevent all rainfall** from entering the trenches.³⁷ This is a patently flawed interpretation of Subpart 7.11.11’s requirement various requirements.³⁸ Importantly, the ALC, in issuing the *2012 ALC Order*, complied with the Court of Appeals’ directive in *Chem-Nuclear 1* to determine Chem-Nuclear’s compliance with Subpart 7.11 without exclusive reliance on ALARA. The ALC noted the following:

- a. the design and function of the engineered barriers, as required by Subparts 7.6.2, 7.11.9, 7.11.10, 7.21, and 7.32.5;
- b. the water collection system which allows for diversion of water that accumulates in the trenches and responds to Subpart 7.11.11’s requirements;
- c. the water detection system which responds to Subpart 7.11.11’s requirements;
- d. the existence of a partially impermeable clay liner in the bottom of the trenches which impeded infiltration; and
- e. the drainage system installed within the trenches to move water out of the trenches.³⁹

³⁶ *Chem-Nuclear I*, 387 S.C. 424, 435, 693 S.E.2d 13, 19.

³⁷ *See generally Chem-Nuclear II*, 414 S.C. 581, 600-611, 779 S.E.2d 805, 814-820.

³⁸ These affirmative actions are separate from Chem-Nuclear’s compliance with and adherence to all other sections of *24A S.C. Code Ann. Reg. § 61-63 Part VII*. This expansion means the Court of Appeals, in *Chem-Nuclear I*, directed the parties on remand to undertake an exercise in complete futility. The Court of Appeals, when it issued *Chem-Nuclear I* in 2010, logically could not have reasonably intended its remand to the ALC to be both futile and unproductive.

³⁹ *Sierra Club v. South Carolina Dept. of Health and Env’tl. Control*, Dkt. No. 04-ALJ-07-0126-CC, pp.10-20 (App.335-346).

All of these measures operate to minimize the migration of water, provide for water detection, and provide for water removal. The 2005 ALC Order supports these findings and shows adherence to Subpart 7.11.11's requirements, independent of the ALC's reliance on evidence of a decline on tritium concentrations at the compliance point and reliance on any other ALARA based standard.⁴⁰ Surprisingly, in Chem-Nuclear II, the Court of Appeals illogically concluded that the 2005 ALC Order's factual findings were inapplicable to determining Chem-Nuclear's compliance with Subpart 7.11.11.⁴¹

The Court of Appeals, in Chem Nuclear I, held that:

At this point, we cannot address whether the ALC erred without giving it an opportunity to issue a specific ruling on whether Chem-Nuclear's disposal practices were in compliance with [Subparts] 7.11, 7.23.6 and subsections of 7.10 that the ALC did not address. On remand, we instruct the ALC that [Subparts] 7.11 and 7.23.6 impose additional compliance requirements for Chem-Nuclear and further instruct the ALC to apply its factual findings to these sections of [S.C. Code Ann. Reg. §] 61-63.⁴²

The ALC, on remand, addressed Subpart 7.11's requirements in light of the 2005 ALC Order's factual findings.⁴³ The ALC enforced the Court of Appeals' sole remand

⁴⁰ Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, Dkt. No. 04-ALJ-07-0126-CC (App.370-385); Chem-Nuclear II, 414 S.C. 581, 598-603, 779 S.E.2d 805, 813-816.

⁴¹ Chem-Nuclear II, 414 S.C. 581, 602-603, 779 S.E.2d 805, 815. Assuming that is correct, the Court of Appeals, in Chem-Nuclear I, should have remanded the case to the ALC, with discretion to remand the case to SCDHEC to determine Chem-Nuclear's compliance with Subpart 7.11.11 through demonstration of Chem-Nuclear's additional measures to attain compliance, or for an explanation as to why those measures were or may not be feasible.

⁴² Chem-Nuclear I, 387 S.C. 424, 693 S.E.2d 13.

⁴³ Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, Dkt. No. 04-ALJ-07-0126-CC, pp.10-20 (App.335-346). Had those findings not been as all-inclusive as they were, the ALC may not have been able to determine compliance with Subpart 7.11. Fortunately, that did not occur as the evidence presented in the week-long trial and the ALC's findings were comprehensive and extensive as to the design and function of the engineered barriers, the water

restriction and didn't place exclusive reliance on either site performance or ALARA.⁴⁴ The Court of Appeals has now significantly enlarged the original ALC restriction by (a) eliminating the ALC's reliance on any established facts to demonstrate Chem-Nuclear's compliance with the subsections of Part VII over and apart from Subpart 7.11 and (b) by misconstruing the requirements of Subpart 7.11.11.⁴⁵ In so doing the Court of Appeals rendered the Chem-Nuclear I remand proceeding held before the ALC in 2012, as for all practical purposes, an exercise in complete and utter futility.

The Court of Appeals concluded Subpart 7.11 set forth certain mandatory "technical requirements" for compliance.⁴⁶ This was certainly a more limiting description of Subpart 7.11 than was provided in Chem-Nuclear I where Subpart 7.11 was described as "compliance requirements."⁴⁷ In concluding Subpart 7.11 imposed "technical requirements" instead of just "compliance requirements," the Court of Appeals determined these "newly discovered" requirements necessitated specific action by Chem-Nuclear.⁴⁸

Review of Part VII shows 24A S.C. Code Ann. Reg. 61-63, Subpart 7.11 is described as "Conditions of Licenses."⁴⁹ Moreover, a review of License No. 097 indicates

collection and detection system, and the partially impermeable clay liner. Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, Dkt. No. 04-ALJ-07-0126-CC (App.370-385).

⁴⁴ Sierra Club v. South Carolina Dept. of Health and Env'tl. Control, Dkt. No. 04-ALJ-07-0126-CC, pp.10-20 (App.335-346).

⁴⁵ Chem-Nuclear II, 414 S.C. 581, 602-603, 779 S.E.2d 805, 815.

⁴⁶ Chem-Nuclear II, 414 S.C. 581, 593-596, 600, 610, 779 S.E.2d 805, 811-812, 815, 819-820.

⁴⁷ Chem-Nuclear I, 387 S.C. 424, 435, 693 S.E.2d 13, 19.

⁴⁸ Chem-Nuclear II, 414 S.C. 581, 610-611, 779 S.E.2d 805, 819-820.

⁴⁹ See 24A S.C. Code Ann. Reg. 61-63, Subpart 7.11. See also Chem-Nuclear I, 387 S.C. 424, 432, 693 S.E.2d 13, 17.

that the requirements of 24A S.C. Code Ann. Reg. 61-63, Subparts 7.11.11.1 through 7.11.11.4 **are included verbatim** as Permit Condition No. 82, under the conditions described as “Burial Operation Conditions.”⁵⁰ In characterizing Subpart 7.11.11 as a “license condition”, SCDHEC has required the licensed activity can only occur provided the enumerated permit conditions are accomplished. In the event Chem-Nuclear fails to conduct its burial operations in accordance with the enumerated conditions, SCDHEC has grounds to proceed with enforcement.⁵¹

The Court of Appeals incorrectly determined Subpart 7.11.11 included “technical requirements” which necessitated specific action by Chem-Nuclear. Subpart 7.11.11 simply embodies licensing conditions. As noted, Subpart 7.11.11’s title is **clear and unambiguous**. SCDHEC complied with Subpart 7.11.11 by including the requirements as express “license conditions”. This enables SCDHEC to pursue enforcement in the event Chem-Nuclear fails to implement these conditions. The Court of Appeals improperly added additional requirements not intended by Subpart 7.11.11.

⁵⁰ (App.432, para. 82). SCDHEC has authority, under the Pollution Control Act, to “[i]ssue, deny, revoke, suspend or modify permits, under such conditions as it may prescribe for the discharge of sewage, industrial waste or other waste or air contaminants ... ” S. C. Code Ann. § 48-1-50(5) (Thomson Reuters West 2013) (Emphasis added). Permit conditions are, by their very nature, an important regulatory tool. “[T]he power to permit necessarily carries with it the power to place conditions on a permit.” Edisto Aquaculture Corp. v. S.C. Wildlife & Marine Resources Dept., 311 S. C. 37, 40, 426 S. E. 2d 753, 755 (1993).

⁵¹ 24A S.C. Code Ann. Reg. 61-63, 1.12.2 authorizes SCDHEC to “make findings of fact and determinations and to assess fines and civil penalties relating to violation of the provisions of [S.C. Code Ann. §§ 13-7-40, *et. seq.* (Thomson Reuters West 20105)] or any regulation, license or license condition.” Chem-Nuclear questions the Court of Appeals’ determination that it has the authority given the posture of this case to order license revocation.

Subpart 7.6, entitled “Specific Technical Information,” applies to both Part VII’s performance objectives and the applicable technical requirements.⁵² Contrary to the Court of Appeals’ position in *Chem-Nuclear II*, the “Specific Technical Information” required to review design features does not prescribe any particular method of “cover” and certainly doesn’t reference either “roofs” or “temporary covers” or “leachate collection systems”.

What is clear from Subpart 7.6 is that the same information which supports compliance with a “technical requirement” may also support compliance with a performance objective. For example, Subpart 7.6.3 requires “[a] description of the principal design criteria and their relationship to the performance objective.” Additionally, Subpart 7.7., “Technical Analyses,” illustrates the direct connection between technical requirements and performance objectives.⁵³

Assuming, *arguendo*, that the compliance requirements contained in Subpart 7.11.11 are, indeed, “technical requirements”, then Subparts 7.6 and 7.7 clearly provide the context as to how such “technical requirements” are reviewed and assessed for

⁵² The “prefatory language of 24A S.C. Code Ann. Reg. 61-63, Subpart 7.6 provides that “[t]he specific technical information shall include the following information needed for demonstration that the performance objectives and the applicable technical requirements of this part will be met.” In fact, Subpart 7.6 does not dictate design, but requires the applicant to provide descriptions of the design features, including “those design features related to infiltration of water; integrity of covers for disposal units, design of covers for disposal units; [and] contact of wastes with standing water; disposal site drainage” 24A S.C. Code Ann. Reg. 61-63, Subpart 7.6.2. The term “cover” as noted in Subpart 7.6.2, is referred to in Subpart 7.2.1 as a “soil cover,” or “disposal unit cover,” or “intruder barrier.” See 24A S.C. Code Ann. Reg. 61-63, Subpart 7.2.14. It is also referenced in the plural – “integrity of covers for disposal units; structural stability of engineered barriers, backfill, wastes and covers” 24A S.C. Code Ann. Reg. 61-63, Subpart 7.6.2.

⁵³ The “prefatory language of 24A S.C. Code Ann. Reg. 61-63, Subpart 7.7 provides that “[t]he specific technical information shall also include the following analyses needed to demonstrate that the performance objectives of this part will be met.”

consistency with Part VII. SCDHEC reasonably does not dictate with precision the design features for a LLRW disposal site. Moreover, all technical analysis must be necessarily accompanied by an ALARA analysis. The Court of Appeals' conclusions in Chem-Nuclear II are inconsistent with and, indeed, may be contrary to the mandatory requirements of 24A S.C. Code Ann. Reg. 61-63, Subparts 7.6 and 7.7.

C. **The Court of Appeals Misapprehended/Overlooked The Standard For Determining Compliance With Subpart 7.11 In Chem-Nuclear I By Excluding Both Other Result-Based Evidence Unrelated To ALARA And Design Features Which Did Not Eliminate Contact With Rainfall.**

In Chem-Nuclear I, the Court of Appeals found Subpart 7.11 “impose[d] additional compliance requirements for Chem-Nuclear such that [ALARA’s] balancing test was [insufficient] to address whether Chem-Nuclear was in compliance with . . . Subpart 7.11.”⁵⁴ The 2005 ALC Order did not specifically address compliance with Subpart 7.11, but concluded “Chem-Nuclear and [SC]DHEC ha[d] shown adherence to ALARA in the measures taken by Chem-Nuclear to address tritium migration from the Barnwell Facility and the potential for releases from other radionuclides that are contained in the waste buried at the Site.” (R.p.48). To the extent SCDHEC or Chem-Nuclear sought to support Chem-Nuclear’s compliance with Subpart 7.11 through this “conclusion of law” and any associated “findings of fact”, that would have constituted an insufficient evidentiary basis. Nevertheless, in Chem-Nuclear I, the Court of Appeals **did not preclude** either Chem-Nuclear, SCDHEC, or the ALC from using other findings related to other requirements within Part VII to, in fact, support Chem-Nuclear’s compliance with Subpart 7.11.⁵⁵

⁵⁴ Chem-Nuclear I, 387 S.C. 424, 693 S.E.2d 13.

⁵⁵ As is noted above, for the Court of Appeals to have do so would be to have rendered the remand to the ALC, which was limited solely to the findings of facts contained in the 2005 ALC Order, a mere nullity.

In Chem-Nuclear II, the Court of Appeals found the ALC had erred in concluding Chem-Nuclear had complied with 24A S.C. Code Ann. Regs. 61-63, Subparts 7.11.11.1, 7.11.11.2, and 7.11.11.4,⁵⁶ and, in turn, imposed significant additional limitations on the evidentiary standard which it had already established in Chem-Nuclear I. The Court of Appeals determined “compliance may not be measured solely by results.”⁵⁷ The record shows the ALC did not measure Chem-Nuclear’s compliance by results, but instead relied on specific physical attributes of the protection system. (App.338-345).⁵⁸

The Court of Appeals, however, deemed the ALC’s findings insufficient to establish Chem-Nuclear’s compliance with Subparts 7.11.11.1 through 7.11.11.4.⁵⁹ First, the Court of Appeals concluded Subpart 7.11.11 imposed additional “technical requirements” and then determined the measure of compliance was whether “Chem-Nuclear took any actions to meet the technical requirements imposed by these subsections.”⁶⁰ The Court of Appeals rejected the ALC’s referenced findings when it considered Chem-Nuclear’s compliance with Subparts 7.11.11.1 and 7.11.11.4, since those findings “have no effect on the initial migration of rainfall.”⁶¹ As relates to 24A S.C. Code Ann. Regs. 61-63, Subpart 7.11.11.4, the Court of Appeals determined that there was no evidence to support

⁵⁶ Chem-Nuclear II, 414 S.C. 581, 600-615, 779 S.E.2d 805, 814-822.

⁵⁷ Chem-Nuclear II, 414 S.C. 581, 600, 779 S.E.2d 805, 815.

⁵⁸ This physical attributes included, but were not limited to, the (a) design of the trenches (including the partially impermeable sand/clay material in the bottom of the trench) (b) slope provided in the trench, (c) clay caps, (d) standpipe installed for water detection,(e) vault lids, (f) surface water management plan, (g) trench drainage system, (h) French drain and sump systems installed, and (i) pumping system to remove water from active trenches. (App.338-345).

⁵⁹ Chem-Nuclear II, 414 S.C. 581, 600-613, 779 S.E.2d 805, 814-822.

⁶⁰ Chem-Nuclear II, 414 S.C. 581, 600, 779 S.E.2d 805, 815.

⁶¹ Chem-Nuclear II, 414 S.C. 581, 602-603, 779 S.E.2d 805, 816.

the assertion Chem-Nuclear minimized, by reducing to the smallest amount possible, the migration of waste-contaminated water.⁶² The Court of Appeals rejected the ALC's factual findings essentially because Chem-Nuclear did not utilize a "leachate collection system."⁶³

Nevertheless, when Subpart 7.11 is read in concert with Subparts 7.6 and 7.7, such coordination shows the Court of Appeals has misconstrued Subpart 7.11.11's intent and general purpose which is to minimize the migration of water, but not to eliminate the contact of rainfall with the disposal units.⁶⁴ Chem-Nuclear demonstrated surface water control through the (a) pump and removal system, (b) ponding or pooling controls, (c) water detection system, and (d) partially impermeable clay and sand barrier which allows for infiltration. Given the clear implication that rainfall is an expected event for which corrective measures have been put in place, the Court of Appeals improperly rejected these facts as a basis for determining that Chem-Nuclear had failed to comply with the requirements of 24 A.S.C. Code Ann. Regs. 61-63, Subparts 7.11.11.1 through 7.11.11.4.⁶⁵

⁶² Chem-Nuclear II, 414 S.C. 581, 611-613, 779 S.E.2d 805, 820-822.

⁶³ Chem-Nuclear II, 414 S.C. 581, 612-613, 779 S.E.2d 805, 821-822.

⁶⁴ For example, 24 A.S.C. Code Ann. Regs. 61-63, Subpart 7.6.2 addresses "standing water" and the "infiltration of water." Subpart 7.6.6 relates to "methods to control surface water." If the intent were to prevent any rain from entering the trenches at all then Subpart 7.6, which governs the technical information required, would certainly specify methods to control rainfall. Instead, Subpart 7.6 seeks information on management measures including the prevention of ponding, surface water controls, and infiltration. All of which necessarily and reasonably presumes that rainfall has entered the trenches and requires management.

⁶⁵ The Court of Appeals improperly insisted that (1) a requirement to minimize migration was tantamount to preventing rainfall from entering the trenches and, (2) infiltration was inappropriate and a leachate collection system should be installed. See Chem-Nuclear II, 414 S.C. 581, 602-612, 779 S.E.2d 805, 815-820.

Unfortunately, the Court of Appeals ignored 24 A.S.C. Code Ann. Regs. 61-63, Subpart 7.7.1 which requires technical information related to “Pathways” which include “air, soil, groundwater, surface water, plant uptake, and exhumation of burrowing animals. The analyses shall clearly identify and differentiate between the roles performed by the natural disposal site characteristics and design features in isolation and segregating the wastes.” Consistent with Subpart 7.7.1, Chem-Nuclear reasonably relied, at least in part, upon the groundwater pathway and groundwater travel time to prevent releases of radioactivity which potentially might have exceeded the applicable regulatory limits.

By construing the requirement to “minimize the migration of water” to mean the elimination and prevention of rainfall from entering trenches, the Court of Appeals has strictly construed the minimization requirement. The Court of Appeals stated:

[S]ubsection 7.23.6 requires Chem-Nuclear to design the disposal site in a way that ‘minimize[s] to the extent practicable the contact of water with waste during storage, the contact of standing water with waste during disposal, and the contact of percolating or standing water with wastes after disposal.’⁶⁶

In doing so, the Court of Appeals rejected the relevancy of any type of ALARA analysis⁶⁷ and, in turn, completely disregarded the necessary and clear effect of 24A S.C. Code Ann. Reg. 61-63, Subpart 3.1,⁶⁸ which applies to Chem-Nuclear as that provision

⁶⁶ Chem-Nuclear II, 414 S.C. 581, 615-616, 779 S.E.2d 805, 822-823. *See also Chem-Nuclear II*, 414 S.C. 581, 602 fn.11, 779 S.E.2d 805, 814-818, 816 fn.11.

⁶⁷ The Court of Appeals stated that in “determining compliance with the technical requirements of [Subpart] 7.11.11.4, however, we consider the actions taken by Chem-Nuclear to comply, not the reasons why it decided not to implement a certain measure based on its own ALARA analysis.” Chem-Nuclear II, 414 S.C. 581, 600-608, 613 fn.18, 779 S.E.2d 805, 814-818, 821 fn.18.

⁶⁸ Subpart 3.1 is captioned “Purpose and Scope”. The second paragraph of this provision states: “The regulations in this part apply to persons licensed by [SCDHEC] to receive,

addresses and encompasses LLRW disposal.⁶⁹ Subpart 7.1.1 specifically states that ‘the requirements of [Part VII] are in addition to, and not in substitution for, other applicable requirements of these regulations.’⁷⁰ Subpart 7.6.11 provides specific standards for the radiation safety program “to ensure compliance with the performance objective in [Subpart] 7.18 and occupational radiation exposure to ensure compliance with the requirements of Part III of these regulations and to control contamination of personnel, vehicles, equipment, buildings, and the disposal site.”⁷¹ Moreover, Subpart 7.20 specifically mandates the protection of institutional personnel during land disposal facility operations.⁷²

possess, use, transfer, or dispose of radioactive material.” See 24 A S.C. Code Ann. Regs. 61-63, Subpart 3.1.

69 As a licensee, Chem-Nuclear is required to implement a radiation protection program “to ensure compliance with the provisions of [Part III].” See 24 A S.C. Code Ann. Regs. 61-63, Subpart 3.4. Moreover, Chem-Nuclear must enforce the occupational dose limits for adults specified in 24 A S.C. Code Ann. Regs. 61-63, Subpart 3.5. Furthermore, under 24 A S.C. Code Ann. Regs. 61-63, Subpart 3.4.2, Chem-Nuclear is required to “use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).”

70 24 A S.C. Code Ann. Regs. 61-63, Subpart 7.1.1.

71 24 A S.C. Code Ann. Regs. 61-63, Subpart 7.6.11.

72 The regulations provide that:

Operations at the land disposal facility shall be conducted in compliance with the standards for radiation protection set out in Part III of these regulations, except for releases of radioactivity in effluents from the land disposal facility, which shall be governed by [Subpart] 7.18. Every reasonable effort should be made to maintain radiation exposures as low as is reasonably achievable.

See 24 A S.C. Code Ann. Regs. 61-63, Subpart 7.20. Furthermore, occupational doses in the Barnwell Facility must be as low as reasonably achievable. 24 A S.C. Code Ann. Regs. 61-63, Subpart 3.5.

The Court of Appeals improperly disassociated 24 A S.C. Code Ann. Regs. 61-63, Subparts 7.11.11.1 through 7.11.11.4 from the Part III's requirements, as well as from Part VII's other plainly stated requirements specifically addressing radiation protection in all operations. These requirements cannot be separated. Like 24 A S.C. Code Ann. Regs. 61-63, Subpart 7.23.6, the provisions in 24 A S.C. Code Ann. Regs. 61-63, Subparts 7.11.11.1 through 7.11.11.4 are necessarily qualified and tempered by the relevant regulations contained in Part III and otherwise set forth in Part VII.

Consequently, the Court of Appeals' strict interpretive standard is legally flawed in several ways. The first flaw is the Court of Appeals' conclusion a "technical requirement" may not be met or addressed by compliance with other regulations.⁷³ The next flaw is the unreasonable conclusion that a regulation requiring "water management" had to be read to mandate the total elimination of rainfall.⁷⁴ The final flaw was, despite Part VII's clear introductory language confirming that the regulations were in addition to, and not separate from, the remaining parts of 24A S.C. Code Ann. Reg. 61-63, the Court of Appeals concluded Subpart 7.11.11 had to be construed separately from all other sections contained in 24A S.C. Code Ann. Reg. 61-63.

⁷³ Chem-Nuclear is required to incorporate engineered barriers through requirements separate and distinct from Subpart 7.11.11. See generally 24 A S.C. Code Ann. Regs. 61-63, Subparts 7.2.9, 7.23.6; Chem-Nuclear II, 414 S.C. 581, 590, 779 S.E.2d 805, 809. The engineered barriers are, however, designed to address the requirements of Subpart 7.11.11. Chem-Nuclear II, 414 S.C. 581, 600, 779 S.E.2d 805, 814. The Court of Appeals wrongly concluded that compliance which satisfies two different regulatory requirements is unavailing and, in turn, Chem-Nuclear must demonstrate both an affirmative and separate action to satisfy Subpart 7.11.11. Furthermore, the Court of Appeals improperly determined that there are no other considerations which are relevant to possibly support a "no action" alternative.

⁷⁴ The elimination of any rainfall would, of course, negate any need for water management since there would be no water to manage.

Chem-Nuclear understands sheltering open disposal trenches adds another level of redundancy to prevent the migration of water on contact between water and waste, even if the shelter is only temporary.⁷⁵ Chem-Nuclear also understands that sealing and grouting vaults⁷⁶ assists in preventing the migration of contaminated water. Finally, Chem-Nuclear knows management of impermeable trenches which collect rainwater helps prevent water migration.⁷⁷ Nevertheless, in each case, Chem-Nuclear **must assess** whether (a) the pursuit of one or more of those preventative measures results in an occupational dose to its or others' employees working in or around the Barnwell Facility and (b) that dose is justified in light of the potential benefits of such additional preventative measures considering the totality of the circumstances of risk to the employees.

These assessments are critical to addressing the risk of occupational employee harm. Nevertheless, even when Chem-Nuclear undertakes this very important and necessary evaluation, the Court of Appeals has concluded this evaluation cannot dictate the terms of any "compliance plan" since Subpart 7.11.11 is so strictly construed.

⁷⁵ A temporary shelter might be removed when wet weather conditions are either not threatened or present, or when a trench is filled to capacity. Additionally, based upon the size of the existing trenches, any temporary shelter is likely to be very large and require multiple workers to set-up, take-down, and move to other trenches.

⁷⁶ Vaults would have to be periodically inspected to determine if they were full and ready for sealing. Sealing and grouting would likely occur in or adjacent to the disposal trenches.

⁷⁷ As noted in the 2005 ALC Order: South Carolina's regulatory authority over radioactive waste is derived from a formal agreement with the United States Atomic Energy Commission (now the Nuclear Regulatory Commission (NRC)). States that entered into such agreements are referred to as Agreement States. (App.365, para.4). Additionally, "[a]n Agreement State may promulgate regulations more stringent than federal regulations, but it must, as a minimum, have regulations that are compatible with federal regulations." (App.366, para. 7). In fact, the Nuclear Regulatory Commission's regulations prescribes the site suitability requirements for land disposal. The requirements in 24A S.C. Code Ann. Regs. 61-63 are, at worst, consistent with the NRC requirements (App.366, para. 9) in that both sets of regulation envision water management and not the prevention of rainfall from entering the trenches.

D. **The Court of Appeals Misapprehended/Overlooked The Barnwell Facility's Natural Attributes Analyzed Under Subpart 7.7, Which Includes Extensive Groundwater Pathways And Travel Time Allowing For Significant Reduction In Tritium Radiation Content Prior To Release.**

The Court of Appeals overlooked the significance of the technical information required under Subpart 7.7 when it concluded that “[a] violation occurs only when water is allowed to come in contact with waste and waste-contaminated water then migrates out of the disposal units.”⁷⁸ In addition, when addressing the holes in the floors of the vaults, the Court of Appeals also overlooked the Barnwell Facility site’s natural physical attributes in concluding “these holes permit water that has come in contact with residual tritium to drain into the trenches which, in turn, allow the water to percolate into the soil and groundwater beneath the facility”⁷⁹ In turn, the Court of Appeals concluded, in error, Chem-Nuclear did not comply with Subpart 7.11.11.1 and 7.11.11.2.⁸⁰

The Court of Appeals misapprehended the requirements of 24A S.C. Code Ann. Reg. 61-63 Part VII which are intended to provide for the **dispersal and management of surface water** rather than the collection and retention of volumes of water containing tritium contamination. Furthermore, the natural physical attributes of the Barnwell Facility site – groundwater pathways and travel time – clearly contribute positively to a reduction in the radiation and ensure site performance and compliance.

⁷⁸ Chem-Nuclear II, 414 S.C. 581, 607-608 fn.15, 779 S.E.2d 805, 818 fn.15 (addressing Subparts 7.11.11.1 and 7.11.11.2).

⁷⁹ Chem-Nuclear II, 414 S.C. 581, 600-608, 609-610, 779 S.E.2d 805, 819-820.

⁸⁰ Chem-Nuclear II, 414 S.C. 581, 600-615, 779 S.E.2d 805, 814-822.

E. Public Policy And Applicable Law Mandates Deference To SCDHEC In Interpreting The Requirements Of Subpart 7.11, Since SCDHEC Has The Technical Expertise And Experience To Balance The Numerous And Potentially Competing Considerations In S.C. Code Ann. Reg. 61-63 Which The Judiciary May Lack.

The Court of Appeals, in reaching its conclusions and crafting its remedy, did not afford any deference to SCDHEC's interpretation and/or application of SCDHEC's own regulations. In matters as complex as the disposal of LLRW, it is particularly important for the judiciary to defer to agency expertise. Here deference should have been given in interpreting and applying the multiple, intertwined regulations contained in 24A S.C. Code Ann. Reg. 61-63.

As regards evidentiary matters in administrative law contested cases, the law provides that "notice may be taken of generally recognized technical or scientific facts with the agency's specialized knowledge. [Furthermore, the] agency's experience, technical competence[,] and specialized knowledge may be utilized in the evaluation of the evidence."⁸¹ Furthermore, in matters of regulatory interpretation "as a general rule, agencies charged with enforcing statutes . . . receive deference from the courts as to their interpretation of those laws."⁸² Additionally, "[t]he construction of a statute by the agency charged with its administration will be accorded the most respectful consideration and will not be overruled absent compelling reasons."⁸³ "As repeatedly stated in [South Carolina

⁸¹ S.C. Code Ann. § 1-23-330(4) (Thomson Reuters West 2013). See generally Roper Hosp. v. Board of South Carolina Dept. of Health & Env'tl. Control, 306 S.C. 138, 141 fn.2, 410 S.E.2d 558, 560 fn.2 (1991).

⁸² State v. Sweat, 379 S. C. 367, 385, 665 S. E. 2d 645, 655 (Ct.App. 2008); Kiawah Dev. Partners II v. South Carolina Dept. of Health & Env'tl. Control, 411 S. C. 16, 766 S.E.2d 707 (2014).

⁸³ CFRE, LLC v. Greenville County Assessor, 395 S. C. 67, 77, 716 S. E. 2d 877, 882. Conversely, albeit understandably, when and if an agency's interpretation conflicts with the statute's plain language, such an interpretation must be rejected. See Sparks v. Palmetto

appellate court] decisions, our deference doctrine provides that courts defer to an administrative agency's interpretations with respect to the statutes entrusted to its administration or its own regulations 'unless there is a compelling reason to differ.' **84**

Here the Court of Appeals determined that language related to minimizing the migration of water and waste contaminated water encompassed rainfall. SCDHEC, however, applies the applicable regulation to the movement of surface water, created as rainwater hits the surface of the earth. This is consistent with 24A S.C. Code Ann. Regs. Part VII and the numerous references therein to **surface water management**. Furthermore, the Court of Appeals "strictly construed" the "requirement to minimize" contained in Subpart 7.11.11, without qualification. SCDHEC, however, applies Subpart 7.11.11 as directed in Subpart 7.1.1. SCDHEC's interpretation does not conflict with the plain language of the regulation. Unfortunately, the Court of Appeals' new interpretation is in conflict.

F. The Court Of Appeals Improperly Shifted The Burden Of Proof To Chem-Nuclear By Concluding Substantial Evidence Did Not Support SCDHEC's Finding That Chem-Nuclear Was In Compliance With 24A S.C. Code Ann. Reg. § 61-63.

In Chem-Nuclear II the Court of Appeals concluded that Chem-Nuclear had not demonstrated compliance with 24A S.C. Code Ann. Reg. 61-63, Subparts 7.10.7, 7.11.11.1, 7.11.11.2, and 7.11.11.4. The Court of Appeals' conclusions were based on a "lack of evidentiary support" or a specific finding in the 2005 ALC Order to support compliance with the aforementioned sections. As relates to Subpart 7.11.11.1, the Court

Hardwood, Inc., 406 S. C. 124, 128, 750 S. E. 2d 61, 53 (2013); Kiawah Dev. Partners II v. South Carolina Dept. of Health & Env'tl. Control, 411 S. C. 16, 31, 766 S Ed 2d 707, 718.

84 Kiawah Dev. Partners II v. South Carolina Dept. of Health & Env'tl. Control, 411 S. C. 16, 31, 766 S Ed 2d 707, 718.

of Appeals determined that “neither the 2005 [ALC] Order, the remand order, nor any other portion of the record or the briefs contain any evidence that Chem-Nuclear has taken a single action to stop a single raindrop from falling onto active vaults and trenches.”⁸⁵ The Court of Appeals has shifted its inquiry from whether the Sierra Club has presented evidence indicating lack of compliance with specific requirement of 24A S.C. Code Ann. Reg. 61-63 to whether Chem-Nuclear has demonstrated compliance with the requirements of 24A S.C. Code Ann. Reg. 61-63 as interpreted by the Sierra Club.

Similarly, in concluding that Chem-Nuclear wasn’t compliant with 24A S.C. Code Ann. Reg. 61-63, Subpart 7.11.11.2, the Court of Appeals concluded that “Chem-Nuclear has not taken action to reduce to the smallest possible amount the migration of waste-contaminated water out of its vaults and trenches”⁸⁶, shifting the inquiry from whether the Sierra Club presented evidence as to lack of compliance to whether Chem-Nuclear has demonstrated compliance. And, in resolving whether Chem-Nuclear complied with 24A S.C. Code Ann. Reg. 61-63, Subpart 7.11.1.4, the Court of Appeals concluded that there was “no additional evidence of Chem-Nuclear’s compliance with this subsection.”⁸⁷ With regard to compliance with 24A S.C. Code Ann. Reg. 61-63, Subpart 7.10.7, the Court of Appeals concluded “it is no longer reasonable for [SC]DHEC to argue Chem-Nuclear complied with [Subpart] 7.10.7 without considering what action Chem-Nuclear took to comply with the technical requirements of [Subpart] 7.11.11.”⁸⁸

⁸⁵ Chem-Nuclear II, 414 S.C. 581, 602, 609-610, 779 S.E.2d 805, 815. (Emphasis added)

⁸⁶ Chem-Nuclear II, 414 S.C. 581, 608, 779 S.E.2d 805, 818. (Emphasis added).

⁸⁷ Chem-Nuclear II, 414 S.C. 581, 610, 779 S.E.2d 805, 820. (Emphasis added).

⁸⁸ Chem-Nuclear II, 414 S.C. 581, 619, 779 S.E.2d 805, 824. (Emphasis added).

The Court of Appeals' inquiry in Chem-Nuclear II shifted focus from whether the Sierra Club demonstrated by a preponderance of the evidence that Chem-Nuclear failed to comply with 24A S.C. Code Ann. Reg. 61-63, Subparts 7.11.11.1, 7.11.11.2, 7.11.11.4, and 7.10.7, to whether Chem-Nuclear had demonstrated compliance. To the contrary, in accordance with long-standing precedent governing administrative hearings, the Sierra Club had the burden of proving lack of compliance by Chem-Nuclear. "The burden of proof is upon the party who by the pleadings has the affirmative on the issue. One who pleads an affirmative defense has the burden of proving it."⁸⁹ Furthermore, "[i]n general, the party asserting the affirmative issue in an adjudicatory administrative proceeding has the burden of proof."⁹⁰

Consequently, the Sierra Club's responsibility was to, itself, demonstrate Chem-Nuclear's specific lack of compliance with 24A S.C. Code Ann. Reg. 61-63, Subparts 7.11.11.1, 7.11.11.2, 7.11.11.4, and 7.10.7 in the initial contested case proceeding that resulted in the 2005 ALC Order. It was not Chem-Nuclear's burden to prove compliance until such admissible evidence presented to the ALC placed that issue in dispute. Our court have recognized that there are "[g]enerally, there are two types of burdens: burden of production and burden of persuasion. Burden of production refers to a party's

⁸⁹ See 2 Am.Jur.2d, Administrative Law, § 360 (1994) ('Generally, the burden of proof is on the party asserting the affirmative issue in an adjudicatory administrative proceeding.');

73A C.J.S., Public Administrative Law and Procedure, § 128 (West 1983) ("In administrative proceedings, the general rule is that an applicant for relief, benefits, or a privilege has the burden of proof, and the burden of proof rests upon one who files a claim with an administrative agency to establish that required conditions of eligibility have been met. It is also a fundamental principle of administrative proceedings that the burden of proof is on the proponent of a rule or order, or on the party asserting the affirmative of an issue.'). See also Leventis v. South Carolina Dept. of Health & Envtl. Control, 340 S. C. 118, 530 S. E. 2d 643 (Ct.App. 2000).

⁹⁰ DIRECTV, Inc. & Subsidiaries v. South Carolina Dept. of Revenue, 421 S. C. 59, 804 S. E. 2d 633 (2017).

responsibility to introduce sufficient evidence on a contested issue to have that issue decided by the fact-finder, rather than decided against the party in a preemptory decision such as directed verdict.”⁹¹ On the other hand the “[b]urden of persuasion is concerned with a party's obligation to sway the fact-finder to view the facts in a way that favors that party.”⁹²

The ALC has, in other contested matters, considered the parties’ burdens of persuasion and production. “The term ‘burden of proof’ has been used to describe two related but distinct concepts: the burden of production and the burden of persuasion.”⁹³ As the authorities have noted, the “burden of persuasion refers to the duty to prove the truth of an issue by the quantum of evidence the law demands in the case in which the issue arises.”⁹⁴ On the other hand, the “burden of production, or burden of going forward with the evidence, refers to the obligation of a party to proceed with evidence, at any stage of the trial, to make or meet a prima facie case.”⁹⁵ Furthermore, “[a]s a trial progresses, the burden of production may shift from one side to the other as the respective parties present evidence.”⁹⁶ Nevertheless, the “burden of persuasion,

⁹¹ Pike v. South Carolina Dept. of Transp., 343 S.C. 224, 231, 540 S.E.2d 87, 91 (2000).

⁹² Pike v. South Carolina Dept. of Transp., 343 S.C. 224, 231, 540 S.E.2d 87, 91; Smith v. Barr, 375 S. C. 157, 161, 650 S. E. 2d 486, 489 (Ct.App. 2007).

⁹³ 29 Am.Jur.2d., Evidence, § 155 (1994); Dir., Office of Workers' Comp. Programs, U.S. Dep't of Labor v. Greenwich Collieries, 512 U.S. 267, 272 (1994).

⁹⁴ Alex Sanders & John S. Nichols, Trial Handbook for South Carolina Lawyers, § 9.1 (3d ed. 2005) (Emphasis in original).

⁹⁵ Alex Sanders & John S. Nichols, Trial Handbook for South Carolina Lawyers, § 9.1 (Emphasis in original).

⁹⁶ Alex Sanders & John S. Nichols, Trial Handbook for South Carolina Lawyers, § 9.1.

however, does not generally shift.⁹⁷ The current standard practice is to use the term 'burden of proof' to refer to the burden of persuasion."⁹⁸ This is the meaning intended by this court when using the phrase 'burden of proof' herein."⁹⁹

In Chem-Nuclear I, the Court of Appeals concluded that a remand was necessary to the ALC to determine if "Chem-Nuclear's current waste disposal practices are in compliance with [Subpart] 7.11 . . ."¹⁰⁰ The issue of specific compliance with 24 A S. C. Code Ann Reg. 61-63, Subpart 7.11 was raised, for the first time, in the Sierra Club's Motion to Reconsider the 2005 ALC Order. However the Court of Appeals concluded in Chem-Nuclear I that the issue of compliance with Subpart 7.11 had been preserved by Sierra Club's "general reference" in its filings with the ALC to 24 A S. C. Code Ann Reg. 61-63. Importantly, 24 A S. C. Code Ann Reg. 61-63, which governs Radioactive Materials, consists of 282 pages of regulatory requirements divided into 11 parts, with multiple sections included within each part. Part VII contains 24 sections and section 7.11 contains 21 separate sub-parts. The complexity and breadth of 24 A S. C. Code Ann Reg. 61-63 supports the conclusion that the Sierra Club had a duty to raise specific compliance issues prior to conclusion of the contested case hearing. The Court of Appeals' remand instructions in Chem-Nuclear I limited consideration of compliance to be dictated by the factual findings contained in the 2005 ALC Order. Importantly, the

⁹⁷ Alex Sanders & John S. Nichols, Trial Handbook for South Carolina Lawyers, § 9.1.

⁹⁸ Dir., Office of Workers' Comp. Programs, U.S. Dep't of Labor v. Greenwich Collieries, 512 U.S. 267, 276.

⁹⁹ South Carolina Dept. of Motor Vehicles v. Morrow, 2007 WL 2509483 (S.C. ALJ Div. 2007).

¹⁰⁰ Chem-Nuclear I, 387 S.C. 424, 427, 693 S.E.2d 13, 14.

Court of Appeals affirmed the ALC's decision that the Sierra Club had failed to present evidence demonstrating non-compliance with the specific requirements of 24 A S. C. Code Ann Reg. 61-63 that were that were identified by the Sierra Club in the initial contested case – “7.10.1, 7.10.2, 7.10.3, and 7.10.4 as well as ... 7.18 and the ALARA test.”

Although the Sierra Club may have successfully preserved the issue of Chem-Nuclear's compliance with Subpart 7.11 by raising it post-hearing, Sierra Club foreclosed its opportunity to produce evidence to the ALC in support of specific compliance with Subpart 7.11 or to persuade the ALC of the weight to be assigned to its claim of lack of compliance with Subpart 7.11. On remand, the ALC, in the 2012 ALC Order was limited to findings of fact and conclusions of law that, as noted by the Court of Appeals in Chem-Nuclear I, fully supported the ALC's conclusion in the 2005 ALC Order that Sierra Club had failed to sustain its burden of proof (inclusive of its burden of production and burden of persuasion) with regard to the specific compliance issues that were litigated in the contested case hearing in 2005. Therefore, it isn't surprising that those same findings of fact refuted Sierra Club's claims of non-compliance with Subpart 7.11 and resulted in the 2012 ALC Order.

In addition to claims of non-compliance related to specific regulatory requirements that were not contested until after the evidentiary hearing, the Sierra Club raised, for the first time, a new legal argument that the requirements in 24 A S. C. Code Ann Reg. 61-63, Subpart 7.11.11.1 “to minimize the migration of water onto the disposal units” and in 24 A S. C. Code Ann Reg. 61-63 Subpart, 7.11.11.2 “to minimize the migration of waste

or waste contaminated water outside of the disposal units” should be interpreted to require prevention of any water from entering the disposal units.

The Sierra Club preserved issues, without the benefit of evidentiary support for the issues, and asserted newly-minted legal argument in support of these issues upon appeal of the 2012 ALC Order. What followed, in Chem-Nuclear II, was an impermissible shifting of the burden of proof and production to Petitioner related to compliance with 24 A S. C. Code Ann Reg. 61-63 Subparts 7.11.11.1, 7.11.11.2, 7.11.11.4, and 7.10.7. The burden of production of rebuttal evidence regarding these compliance issues never shifted to Chem-Nuclear as these issues were raised after both the trial record closed and the 2005 ALC Order was issued.

The Court of Appeals erred in Chem-Nuclear II in concluding that “[a]s to the four separate subsections of [24 A S. C. Code Ann Reg.] 61-63, [SC]DHEC failed to enforce the law of South Carolina.” **101** This conclusion is in error as it is based on a determination that both SCDHEC and Chem-Nuclear ***failed to demonstrate*** compliance which is an impermissible shifting of the burden of proof. The burden of proving lack of compliance is the Sierra Club’s burden. That burden never shifted to either SCDHEC or to Chem-Nuclear to refute anything as the Sierra Club ***never*** introduced evidence at the contested case hearing to demonstrate lack of compliance with Part VII of 24 A S. C. Code Ann Reg. 61-63. The Sierra Club attempted to overcome this significant impediment by asserting a legal argument that 24 A S. C. Code Ann Reg. 61-63, Subparts 7.11.11.1, 7.11.11.2, 7.11.11.4, and 7.10.7 mandate no contact between water, waste, and waste disposal areas. Without the benefit of acceptance of this legal interpretation of the

101 Chem-Nuclear II, 414 S.C. 581, 622, 779 S.E.2d 805, 826.

regulatory requirements, the Sierra Club has no legal or factual basis to support its assertions of lack of compliance. As is discussed herein, Chem-Nuclear disputes such that such an interpretation of the regulations is logical or permissible.

The conclusions of lack of compliance in Chem-Nuclear II are flawed based on the shifting of the burden of production to Chem-Nuclear and SCDHEC and on the reliance on an interpretation of regulatory requirements that interprets “minimization” to require “prevention.” These errors warrant reversal of Chem-Nuclear II.

IV. CONCLUSION

Based upon the foregoing arguments and citation of authority, the Petitioner, Chem-Nuclear Systems, LLC, respectfully request this Supreme Court to reverse the Court of Appeals’ decision herein in all respects.

Respectfully submitted:

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7 December 2017

STATE OF SOUTH CAROLINA
IN THE
SUPREME COURT

Appeal from the Administrative Law Court
Honorable Ralph King Anderson, III, Administrative Law Judge
Case No. 04-ALC-07-0126-CC

South Carolina Court of Appeals
414 S.C. 581, 779 S.E.2d 809 (Ct.App. 2015)

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Sierra Club,

S.C. SUPREME COURT

Respondent,

v.

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

Defendants,

Of whom Chem-Nuclear Systems, LLC, is the

Petitioner,

and South Carolina Department of Health and
Environmental Control is,

Respondent.

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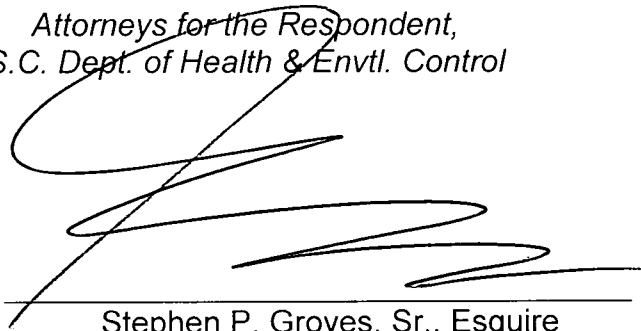
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