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## South of Eden: Paying Coal Ash Cleanup Costs in South Carolina

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**SOUTH OF EDEN: PAYING COAL ASH CLEANUP  
COSTS IN SOUTH CAROLINA**

Jalen Brooks-Knepfle\*

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I. INTRODUCTION: INITIAL RESPONSES TO COAL ASH DISASTERS

In 2008, a wall broke at a coal plant in Kingston, Tennessee, releasing millions of gallons of coal ash sludge into the surrounding community, leading to widespread evacuations and damaging fifteen homes.<sup>1</sup> Then, in February 2014, a pipe broke at Duke Energy’s Dan River Steam Station in Eden, North Carolina, sending millions of gallons of wet coal ash into the Dan

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1. Samira J. Simone, *Tennessee Sludge Spill Runs Over Homes, Water*, CNN (Dec. 24, 2008), <http://www.cnn.com/2008/US/12/23/tennessee.sludge.spill/> [<https://perma.cc/SJ4C-BLLN>].

River before the energy company finally plugged the leak.<sup>2</sup> The spill released arsenic into the river, leading to concerns about drinking water and wildlife safety.<sup>3</sup> These events prompted many states to reconsider their relationships with coal ash and drove many to reform their regulation of the waste product and to require cleanup procedures for the hazardous material.<sup>4</sup> One such state lies just to the south of Eden: South Carolina, where a series of law suits from 2012 to 2015 sparked the cleanup of 20 million tons of coal ash throughout the state.<sup>5</sup>

While the coal ash cleanup efforts in our state are admirable, it remains to be determined who should pay for the expensive process of excavating existing coal ash and moving it to safer facilities. The cost of these operations could fall onto investors in our state's utilities: Duke Energy, South Carolina Electric and Gas Company (SCE&G), and Santee Cooper.<sup>6</sup> But the cost could also fall on the utilities' customers as utilities raise electricity rates in order to avoid the costs. North Carolina and Virginia legislatures are already discussing this issue as coal ash excavations continue in those states,<sup>7</sup> but South Carolina has taken only minimal steps towards deciding on cost allocation,<sup>8</sup> granting the state a chance to decide where it wants the costs to fall in the future. This Note argues that, while legislators and public utility

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2. Catherine E. Shoichet, *Spill Spews Tons of Coal Ash into North Carolina River*, CNN (Feb. 9, 2014), <https://www.cnn.com/2014/02/09/us/north-carolina-coal-ash-spill/index.html> [<https://perma.cc/R2YA-XUP5>].

3. *Id.*

4. See BARBARA GOTTLIEB ET AL., PHYSICIANS FOR SOC. RESPONSIBILITY & EARTHJUSTICE, COAL ASH: THE TOXIC THREAT TO OUR HEALTH AND ENVIRONMENT, at vi (2010) (noting increased public attention); *South Carolina Leads Southeast in Coal Ash Cleanup: NC and TN Taking Action*, CLEANENERGY.ORG: GUEST BLOG (May 3, 2016) [hereinafter *South Carolina Leads*], <https://cleanenergy.org/blog/south-carolina-leads-southeast-in-coal-ash-cleanup-nc-and-tn-taking-action/> [<https://perma.cc/UKK4-N873>].

5. *South Carolina Leads*, *supra* note 4; *South Carolina's Coal Ash: The Story of a Clean Up*, S. ENVTL. L. CTR. (July 24, 2015) [hereinafter *South Carolina's Coal Ash*], <https://www.southernenvironment.org/news-and-press/news-feed/south-carolinas-coal-ash-the-story-of-a-clean-up> [<https://perma.cc/D2VF-8DCQ>].

6. The cost allocation question is made more complicated by the fact that Dominion Energy now owns SCE&G. Thad Moore & John McDermott, *Dominion Officially Owns SCANA, SCE&G, a Year After Offering to Resolve SC Nuclear Fiasco*, POST & COURIER (S.C.) (Jan. 2, 2019), [https://www.postandcourier.com/business/dominion-officially-owns-scana-sce-g-a-year-after-offering/article\\_6e6ce794-0e96-11e9-a427-f39103ba4115.html](https://www.postandcourier.com/business/dominion-officially-owns-scana-sce-g-a-year-after-offering/article_6e6ce794-0e96-11e9-a427-f39103ba4115.html) [<https://perma.cc/2RS4-KY39>].

7. Catherine Morehouse, 'No Chance' on Making Duke Absorb Coal Ash Costs, *North Carolina GOP Says*, UTIL. DIVE (Apr. 9, 2019), <https://www.utilitydive.com/news/no-chance-north-carolina-gop-says-on-making-duke-absorb-coal-ash-costs/552326/> [<https://perma.cc/9JSS-5YNF>].

8. See John Downey, *S.C. Regulators Voice Payment Concerns in Duke Energy Progress Coal-Ash Cleanup*, CHARLOTTE BUS. J. (Oct. 31, 2016), <https://www.bizjournals.com/charlotte/news/2016/10/31/s-c-regulators-concerned-about-who-pays-what-for.html> [<https://perma.cc/W85K-2R5T>].

commissioners should not completely prohibit utilities from raising rates to pay for the excavations, a significant portion of the costs should fall on the utilities' shareholders themselves. Allocating cleanup costs in this way will incentivize proper coal ash disposal methods as well as avoid the market inefficiencies inherent in internal subsidies.

In order to reach this conclusion, this Note provides a basic explanation of what coal ash is, what health risks are associated with it, and how to store it to mitigate those health risks. Part II discusses the background of coal ash: what it is, where it comes from, and what risks are associated with it. Additionally, it offers a discussion of the extent of coal ash contamination in the United States, as well as the status of coal ash cleanups in South Carolina specifically. Part III provides additional background by discussing federal efforts to regulate coal ash disposal and analyzing why state efforts like South Carolina's have largely replaced federal efforts. Part IV turns from statutory coal ash regulation to electricity rate setting and the effects it has on environmental issues, explaining why coal ash cleanups do not fall neatly into this existing regulatory structure. Finally, Part V examines analogous situations to coal ash cleanups and how other states handle such efforts to determine the best way forward for South Carolina.

As this Note delves into the intricacies of hazardous waste regulation and electricity rate making, it is important to remember what is at stake. In September 2019, Santee Cooper crews found a breach in one of the surface impoundments at their Conway site.<sup>9</sup> However, the company did not expect environmental damage.<sup>10</sup> Why? Because the pond had already been excavated as part of Santee Cooper's coal ash cleanup efforts.<sup>11</sup> Improving coal ash disposal has real, positive impacts on the people of South Carolina, and if its citizens want to prevent future environmental damage and devastating health consequences, they must determine the best way to pay for it.

## II. BACKGROUND: UNDERSTANDING COAL ASH

Coal ash is the waste product that results from burning coal in power plants.<sup>12</sup> The substance can take many forms: fly ash is the dry, powdery version that is released into the air through smokestacks, while bottom ash is coarser and falls to the floor of the furnace.<sup>13</sup> Boiler slag is liquified bottom

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9. Tim Renaud, *Santee Cooper: Former Coal Ash Pond Breached, No Environmental Impacts Are Expected*, COUNT ON NEWS 2 (Sept. 9, 2019), <https://www.counton2.com/news/south-carolina-news/santee-cooper-former-coal-ash-pond-breached-no-environmental-impacts-are-expected/> [<https://perma.cc/Z7MX-3D3U>].

10. *Id.*

11. *See id.*

12. GOTTLIEB ET AL., *supra* note 4, at v.

13. *Id.* at vii.

ash that forms into hard pellets when it comes into contact with water.<sup>14</sup> Flue gas desulfurization waste is the product that results when air pollution scrubbers capture the sulfur dioxide emissions before they enter the air.<sup>15</sup> Finally, fluidized bed combustion waste results from a specialized combustion process.<sup>16</sup> These forms of coal ash contain a variety of contaminants, including arsenic, lead, and mercury.<sup>17</sup> Humans can expose themselves to these contaminants when they drink water into which coal ash has leached, eat fish that have consumed coal ash, or breathe coal ash particles from the air.<sup>18</sup> Contaminant leaching into groundwater is the most common path of exposure.<sup>19</sup> Although breaches like the spills in Kingston, Tennessee, and Eden, North Carolina, are the most dramatic examples of coal ash contamination, insidious leaching of contaminants into groundwater is a far more common problem.<sup>20</sup> Exposure to such coal ash causes many health risks; according to the Environmental Protection Agency (EPA), living next to a coal ash disposal site increases risk of cancer and other diseases.<sup>21</sup>

In order to mitigate these negative health effects, coal plants store their coal ash waste product in a variety of ways. If the coal ash is dry, plants can store it in landfills, which companies often locate at the site where they burned the coal.<sup>22</sup> Alternatively, power plants can mix coal ash with water and store it in ponds called surface impoundments.<sup>23</sup> Finally, often in the construction industry, a company can mix coal ash with other materials and reuse the product in later applications.<sup>24</sup>

The amount of leaching at coal ash disposal sites varies greatly, indicating that the method of coal ash storage is extremely important for mitigating health risks in surrounding areas.<sup>25</sup> The EPA has determined that there are two main risk factors regarding coal ash storage: (1) use of surface impoundments, also called wet ponds, rather than dry landfills and (2) absence of composite liners to prevent leaking and leaching.<sup>26</sup> Without a composite liner, or a liner constructed from several layers of different materials, there is no barrier besides soil and sometimes rock to keep coal ash contaminants out of the

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14. *Id.*

15. *Id.*

16. *Id.*

17. *Id.* at vi.

18. *Id.* at 8.

19. *See id.* at 9.

20. *Id.*

21. *See id.* at vi.

22. *Id.* at 7.

23. *Id.*

24. *Id.* at 7, 17.

25. *See id.* at 9.

26. *Id.* at 7.

groundwater.<sup>27</sup> To avoid these dangerous risk factors, the safest way to store coal ash is in dry landfills lined with composite materials.<sup>28</sup>

The scale of coal ash disposal sites makes implementation of these safety features crucial. Coal ash disposal sites are very common in the United States. After mining waste, coal ash is the “second largest industrial waste stream” in the country.<sup>29</sup> It is difficult to determine just how many disposal sites there are, but the EPA has verified that such sites exist in at least forty-six states.<sup>30</sup> The EPA has formally identified sixty-three “proven and potential” cases where coal ash has contaminated water in the United States.<sup>31</sup> Some environmental groups claim that number is actually much higher: Earthjustice and the Environmental Integrity Project have documented seventy more cases.<sup>32</sup>

One of the forty-six states containing coal ash waste disposal sites is South Carolina.<sup>33</sup> In one of the largest pollution cleanups in its history, South Carolina urged its major utilities to alter these sites according to the best practices described above.<sup>34</sup> Between 2012 and 2015, the three major utilities in South Carolina committed to moving unlined coal ash impoundments to lined, dry storage.<sup>35</sup> Part III will discuss these efforts in more detail.

### III. STATE AND FEDERAL RESPONSES TO THE COAL ASH PROBLEM

South Carolina’s cleanup efforts began with private lawyers acting on behalf of local landowners to litigate a South Carolina coal ash site.<sup>36</sup> The Southern Environmental Law Center (SELC) became interested in the case

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27. *Id.*

28. See ABEL RUSS ET AL., ENVTL. INTEGRITY PROJECT, COAL’S POISONOUS LEGACY: GROUNDWATER CONTAMINATED BY COAL ASH ACROSS THE U.S. 49 (2019) (arguing states, the EPA, or both should use dry storage for all coal ash disposal sites); Catherine Morehouse, *TVA Shifts Coal Ash Strategy in Response to Spill, Obama-Era Rule*, UTIL. DIVE (Aug. 29, 2018), <https://www.utilitydive.com/news/tva-shifts-coal-ash-strategy-in-response-to-spill-obama-era-rule/531149/> [<https://perma.cc/DM9C-ZRDC>] (quoting a Tennessee Valley Authority spokesperson asserting that dry, lined pits are the best way to prevent another Kingston spill); Emilie Karrick Surrusco, *What a Real Coal Ash Cleanup Looks Like*, EARTHJUSTICE: OUR STORIES (Apr. 8, 2019), <https://earthjustice.org/blog/2019-april/coal-ash-victory-in-north-carolina-serves-as-a-model-for-the-nation> [<https://perma.cc/9LD3-TL7R>] (quoting an Earthjustice attorney arguing for excavation of all coal ash disposal sites, in contrast with the old way of storing all toxic waste as cheaply as possible).

29. GOTTLIEB ET AL., *supra* note 4, at 8.

30. *Id.* at 7.

31. *Id.* at 15.

32. *Id.*

33. *Id.* at 16 fig.3.

34. *South Carolina’s Coal Ash*, *supra* note 5.

35. *South Carolina Leads*, *supra* note 4.

36. *South Carolina’s Coal Ash*, *supra* note 5.

and decided to attack the coal ash problem site-by-site, rather than aiming for legislation at the state or national level.<sup>37</sup> First, SELC brought a state court action against SCE&G at Wateree Station near Columbia.<sup>38</sup> SELC brought the action on behalf of the Catawba Riverkeepers in January 2012; eight months later, the parties settled.<sup>39</sup> SCE&G made a voluntary deal in 2011 with the South Carolina Department of Health and Environmental Control (SCDHEC) to excavate coal ash,<sup>40</sup> but SELC was adamant that this new agreement legally bind SCE&G to clean up.<sup>41</sup> SCE&G was supposed to complete its cleanups by 2020,<sup>42</sup> and it was able to finish the job by December 2019.<sup>43</sup> Once SCE&G began removing coal ash there, arsenic levels in two wells beneath the pond decreased by over 90%.<sup>44</sup>

Next, a combination of public pressure and litigation led the Santee Cooper utility to agree to clean up a coal ash disposal site at its Grainger Generating Station near Conway.<sup>45</sup> SELC sued Santee Cooper over this site in 2012.<sup>46</sup> Like the SCE&G sites, the parties settled quickly, with the utility promising to excavate.<sup>47</sup> Santee Cooper is currently ahead of schedule on its cleanups.<sup>48</sup> It is developing plans to close the ponds, gathering feedback at public meetings.<sup>49</sup>

Finally, SELC began research on Duke Energy after the Dan River spill.<sup>50</sup> SELC's alert,<sup>51</sup> coupled with a newspaper report disclosing that Duke's earthen coal ash dams had leaks along the Saluda River and a 2010 federal government report finding that the leaks dated back twenty-four years,<sup>52</sup>

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37. *Id.*

38. *Id.*

39. Cliff LeBlanc, *SCE&G Coal Ash Pit Close to Being Cleaned*, STATE (Aug. 8, 2017), <https://www.thestate.com/news/local/article166081787.html>.

40. Sammy Fretwell, *Some Good News for the Wateree River and Groundwater in Eastern Richland County*, STATE (Dec. 19, 2019), <https://www.thestate.com/news/local/environment/article238543508.html>.

41. *See South Carolina's Coal Ash*, *supra* note 5.

42. LeBlanc, *supra* note 39.

43. Fretwell, *supra* note 40.

44. *South Carolina Leads*, *supra* note 4.

45. *South Carolina's Coal Ash*, *supra* note 5.

46. Andrew Brown, *Santee Cooper Developing Plans to Clean up Remaining Coal Ash Ponds*, POST & COURIER (S.C.) (Dec. 26, 2019), [https://www.postandcourier.com/business/santee-cooper-developing-plans-to-clean-up-remaining-coal-ash/article\\_544c06e0-233c-11ea-94b9-ffcde9116688.html](https://www.postandcourier.com/business/santee-cooper-developing-plans-to-clean-up-remaining-coal-ash/article_544c06e0-233c-11ea-94b9-ffcde9116688.html) [https://perma.cc/C2QB-9K4L].

47. *Id.*

48. *South Carolina Leads*, *supra* note 4.

49. Brown, *supra* note 46.

50. *South Carolina's Coal Ash*, *supra* note 5.

51. *Id.*

52. Sammy Fretwell, *Duke Agrees to Clean Up the Last of SC's Coal Ash Ponds*, STATE (Dec. 18, 2014), <https://www.thestate.com/news/local/article13927817.html> [https://perma.cc/X479-8Y95].

spurred SCDHEC to investigate Duke Energy. SELC followed the process.<sup>53</sup> SCDHEC found many violations at Duke's coal ponds, including weak earthen dams and trees threatening the structural integrity of a dam along the Saluda River.<sup>54</sup> SCDHEC put pressure on Duke Energy, and the utility agreed to clean up at the end of 2014.<sup>55</sup> In 2015, Duke announced it would also clean up a Lake Robinson disposal site.<sup>56</sup> In total, these three utilities pledged to clean up about 20 million tons of coal ash.<sup>57</sup>

Upon learning of South Carolina's efforts on coal ash cleanups, one might wonder why it is the state, rather than the federal government, taking this action. In fact, the federal government has instituted regulations in response to the widespread problem of coal ash disposal.<sup>58</sup> Addressing major coal ash impoundment spills, the EPA promulgated the Disposal of Coal Combustion Residuals from Electric Utilities (DCCREU) rule in late 2014.<sup>59</sup> However, because of weaknesses in the DCCREU and decreased federal interest in coal ash regulation, states have taken the lead in this area.<sup>60</sup>

Federal efforts to address the coal ash problem began after the Kingston coal ash impoundment spill described above made it clear the EPA needed to address the issue.<sup>61</sup> The agency began its considerations after the 2008 spill in Tennessee.<sup>62</sup> However, this process took many years, and just four days after the EPA announced it would issue its final rule by the end of December 2014, another major spill occurred.<sup>63</sup> As discussed earlier, this spill occurred on the Dan River in Eden, North Carolina.<sup>64</sup>

Soon after, the EPA finally promulgated the final coal ash rule, the DCCREU, which instituted some standards but left many individuals concerned that it did not go far enough.<sup>65</sup> The DCCREU regulates coal ash as

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53. *South Carolina's Coal Ash*, *supra* note 5.

54. *Fretwell*, *supra* note 52.

55. *South Carolina's Coal Ash*, *supra* note 5.

56. *Id.*

57. *Id.*

58. See generally *Disposal of Coal Combustion Residuals from Electric Utilities Rulemakings*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/coalash/coal-ash-rule> [<https://perma.cc/8Q2B-8GJW>] (noting the various federal regulations implemented).

59. *Id.*

60. See, e.g., *South Carolina's Coal Ash*, *supra* note 5 (noting that the state agency was pushing cleanup efforts); *South Carolina Leads*, *supra* note 4 (calling for state regulators to do more).

61. Brittany L. Daniels, Comment, *Caution: Hazards Ahead! How the EPA's Refusal to Classify Coal Ash as Hazardous Waste Fuels Environmental and Public Health Concerns*, 27 VILL. ENVTL. L.J. 93, 103 (2016).

62. Jacob Arechiga & Anna Kochut, *EPA's Coal Combustion Residuals Rule: D.C. Circuit Ruling and Agency Rulemaking*, 48 TEX. ENVTL. L.J. 373, 374 (2018).

63. Daniels, *supra* note 61, at 106.

64. *Id.*

65. See *id.* at 109–12 (discussing the weaknesses of DCCREU).



nonhazardous waste—a solid waste at the same level as household garbage (as opposed to hazardous waste).<sup>66</sup> Its status as nonhazardous means the applicable guidelines are less stringent and not federally enforceable.<sup>67</sup> Accordingly, while plants must monitor disposal sites and use liners in new landfills and surface impoundments,<sup>68</sup> the guidelines do not require plants to line existing disposal sites “unless they are already leaking.”<sup>69</sup> Initially, the EPA could only recommend that states develop solid waste management plans, but not enforce these plans.<sup>70</sup> However, the Water Infrastructure Improvements for the Nation Act of 2016 “explicitly gave the EPA” authority over state permitting programs.<sup>71</sup>

Legislators addressed and mitigated the enforcement limitation, but other shortcomings remain. As previously mentioned, the DCCREU does not require plants to line existing disposal sites until they begin to leak.<sup>72</sup> It also lists coal ash as the less-regulated “nonhazardous waste.”<sup>73</sup> Additionally, the DCCREU does not apply to disposal sites in caves or mines, or to retired sites.<sup>74</sup> It furthermore allows “beneficial use” of coal ash, or reusing coal ash for other purposes, which can create additional pathways of exposure.<sup>75</sup> Finally, citizens can only challenge power plants by bringing private lawsuits in federal court, which makes enforcement difficult.<sup>76</sup>

To compound these difficulties, federal regulation of coal ash disposal is waning under the Trump Administration.<sup>77</sup> While the Obama Administration wanted to phase out unlined and waterfront pits by April 2019, the Trump EPA extended the deadline by eighteen months.<sup>78</sup> Additionally, the EPA relaxed testing standards for dangerous contaminants like lead.<sup>79</sup> The coal

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66. *Id.* at 110.

67. *Id.* at 120.

68. Brian Palmer, *Stop Polluting Our Water, Ash Holes!*, NAT. RESOURCES DEF. COUNCIL: ONEARTH (Dec. 19, 2014), <https://www.nrdc.org/onearth/stop-polluting-our-water-ash-holes> [<https://perma.cc/X4WL-4N6N>].

69. Daniels, *supra* note 61, 111; Palmer, *supra* note 68.

70. See Palmer, *supra* note 68.

71. Arechiga & Kochut, *supra* note 62, at 374.

72. Daniels, *supra* note 61, at 111; Palmer, *supra* note 68.

73. Daniels, *supra* note 61, at 110; *Criteria for the Definition of Solid Waste and Solid and Hazardous Waste Exclusions*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/hw/criteria-definition-solid-waste-and-solid-and-hazardous-waste-exclusions> [<https://perma.cc/94FJ-JVFM>] (noting that coal ash would be excluded from hazardous waste).

74. Daniels, *supra* note 61, at 110.

75. *Id.* at 115.

76. *Id.* at 116.

77. Dennis Romero, *Trump’s EPA Rolls back Obama-Era Coal Ash Regulations*, NBC NEWS (July 18, 2018), <https://www.nbcnews.com/news/us-news/trump-s-epa-rolls-back-obama-era-coal-ash-regulations-n892586> [<https://perma.cc/AAN3-KTM6>].

78. *Id.*

79. *Id.*

industry maintains that the extended deadline simply gives them more time to comply and will save them money.<sup>80</sup> Environmentalist groups, on the other hand, warn that the changes will result in an increase in unsafe drinking water.<sup>81</sup> The inherent limitations of the DCCREU added to these recent changes mean that states like South Carolina that want coal ash cleanup must take action without the federal government's help.

As previously discussed, South Carolina is well on its way in this regard.<sup>82</sup> But why would all the South Carolina utilities agree to go through the expensive process of excavating their coal ash if the federal government does not require it? Why were they all willing to settle with SELC? The challenges came in rapid succession, between 2012 and 2015, and the utilities agreed to settle quickly, within a year or so of initial challenge. Court documents are hard to find for these legal challenges, and news articles are frustratingly vague about the legal bases of the suits. It seems that knowledge of past wrongdoings motivated companies like Duke Energy—SCDHEC found several violations at its coal ash ponds before the utility agreed to settle.<sup>83</sup> Perhaps, then, the utilities' eagerness to settle results from the knowledge that their coal ash disposal practices over the past years would outrage the public, and they are reluctant to bring those practices to light through a court case. No matter what their motivation, the excavations are well underway, leading to the present question of cost allocation.

#### IV. WHO PAYS FOR COAL ASH SOLUTIONS

As states eschew federal responses to the coal ash problem and begin implementing solutions themselves, they are starting to ask who should pay for the ongoing cleanups. Before diving into this question, one must understand the basics of electricity regulation in the United States. The American electricity system involves many different actors. To begin, electric utilities are in charge of delivering electricity to consumers.<sup>84</sup> These utilities form "natural monopolies,"<sup>85</sup> which means that a single utility supplies all the demand in a particular market by itself because the market cannot support more than one producer.<sup>86</sup> This monopoly means that, unlike in a normal market, customers cannot "shop around" to find the best product, so consumers rely on government regulations, instead of traditional competition,

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80. *Id.*

81. *Id.*

82. *South Carolina's Coal Ash*, *supra* note 5; *South Carolina Leads*, *supra* note 4.

83. Fretwell, *supra* note 52.

84. See JIM LAZAR, RAP, ELECTRICITY REGULATION IN THE US: A GUIDE 3 (2d ed. 2016).

85. *Id.* at 3–4.

86. *Natural Monopoly*, BLACK'S LAW DICTIONARY (11th ed. 2019).

to ensure quality.<sup>87</sup> This is the point where government agencies get involved: state agencies set electricity rates—the prices utilities may charge consumers for electricity.<sup>88</sup> State commissions determine electricity rates based on a formula that calculates the cost of the utility’s investment plus “reasonable return on the invested capital portion of those costs.”<sup>89</sup> Where environmental considerations fit into this process is one of the difficulties with regulating coal ash disposal. This question is difficult to answer because separate agencies handle rate setting and environmental considerations, such as pollution control and waste disposal.<sup>90</sup>

Despite the customary split between environmental regulation and rate-setting regulation, there are still some ways in which state utility regulators make environmental decisions. Utility regulators have started to expand into economic evaluations of various pollution-control mechanisms.<sup>91</sup> In some states, economic regulators consider environmental costs and risks in addition to economic costs and risks.<sup>92</sup> As government agencies promulgate more environmental regulations, economic regulators take a more active role in the environmental arena.<sup>93</sup> For example, regulations for coal ash disposal will become important as state regulators consider rates for coal-powered electricity.<sup>94</sup>

Given this background, then, who generally pays for the costs of coal ash cleanups? The answer is not as simple as one might think—these cleanups are a relatively new phenomenon. In the past, state agencies have generally allowed utilities to recover the costs of pollution control through increased rates.<sup>95</sup> In other words, utilities raise the price of electricity in order to break even on environmental compliance costs. Applied to coal ash in South Carolina, this would mean that Duke Energy (or the other two state utilities, SCG&E or Dominion) could simply charge its customers more money for electricity and effectively recover the amount it spends on cleaning up unsafe disposal sites. The costs would fall on consumers, the very people likely to suffer negative health effects from the leaking coal ash. But if this situation does not seem fair, take heart that a cost allocation alternative exists. Sometimes, when a “utility has been imprudent,” the state agency may not permit such a cost recovery scheme.<sup>96</sup> Under this model, were a court to find

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87. LAZAR, *supra* note 84, at 5.

88. *Id.* at 3, 29.

89. *Id.* at 5.

90. *Id.* at 3, 30.

91. *Id.* at 148.

92. *Id.* at 34.

93. *Id.*

94. *See id.* at 157.

95. *Id.*

96. *Id.* at 150.

that Duke Energy was not careful enough in storing its coal ash, it could prohibit the utility from raising rates to pay itself back for cleanup efforts. In this scenario, the costs would fall on Duke Energy itself, rather than electricity consumers.

It is true that this is not the typical way that state agencies have treated environmental compliance costs in the past—cost recovery is the more common method of cost allocation.<sup>97</sup> This seems to indicate that regulations should not allow South Carolina utilities to recover compliance costs from consumers. But the recent increase in environmental regulations on compliance means that it is time to reevaluate the issue of cost recovery for environmental compliance.<sup>98</sup> These coal ash cleanup cases are on a different scale than any pollution cleanup scheme in South Carolina history.<sup>99</sup> The new excavation agreements are addressing a novel problem with unprecedented regulation.<sup>100</sup> The change in scale means the rules should change as well; it is the investor, not the consumer, who should pay for the bulk of cleanup measures. The remainder of this Note will consider cost allocation in analogous situations to coal ash disposal in order to determine the way that states should handle coal ash costs in the future.

## V. COST ALLOCATION IN ANALOGOUS SITUATIONS

Because case law on the relatively new area of coal ash cleanup cost allocation is difficult to find, this Note will instead consider how states have allocated costs of environmental cleanups in situations that are analogous to coal ash cleanups. Such situations include electricity decarbonization, hydroelectric power, natural gas leaks, and nuclear power. Additionally, the North Carolina legislature is already starting to consider coal ash cleanup cost allocation, and South Carolina has made some tentative steps towards cost allocation.<sup>101</sup> This Note will also consider regulation in those states.

### *A. Decarbonization Efforts in the Electricity Industry: Cost Allocation Incentivizes Renewable Energy*

One area where state governments use electricity rate increases to promote changes in the energy sector is state efforts to decarbonize the

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97. *Id.*

98. *Id.* at 157.

99. *South Carolina's Coal Ash*, *supra* note 5.

100. *Id.*

101. Iulia Gheorghiu, *South Carolina Regulators Slash Duke Energy Progress Rate Hikes, Cut \$333M Coal Ash Recovery*, UTIL. DIVE (May 9, 2019), <https://www.utilitydive.com/news/south-carolina-regulators-slash-duke-energy-progress-rate-hikes-cut-333m/554453/> [<https://perma.cc/2KHQ-2QY3>]; Morehouse, *supra* note 7.

electricity industry.<sup>102</sup> There are several ways in which state regulators use rate setting to encourage renewable resource use. States sometimes require utilities to generate a certain amount of electricity from renewable sources.<sup>103</sup> Affected utilities then recover compliance costs by raising rates (although utilities often spread these costs widely, only minimally impacting rates).<sup>104</sup> Alternatively, federal and state regulators sometimes effectively build subsidies for utility decarbonization efforts into consumer rates—they raise electricity rates, using the extra money on low-carbon electricity sources.<sup>105</sup> Referred to as an internal subsidy, this policy acts as an alternative to taxation.<sup>106</sup> It mitigates the problem of “high front-end fixed costs” for renewable electricity projects, often for projects like nuclear power, carbon capture, and solar.<sup>107</sup> Another common beneficiary of ratepayer subsidies is distributed energy resources,<sup>108</sup> or technologies that generate electricity near the locations that will use it, such as rooftop solar panels or small wind turbines.<sup>109</sup> Thus, internal subsidies can be an achievable way to encourage low-carbon electricity generation.

South Carolina utilities may argue that raising rates to pay for coal ash cleanups is akin to these internal subsidies for decarbonization efforts. Utilities are simply subsidizing the costs of the cleanups via electricity rates in order to pay for a service that society desires, except in this case where the service is coal ash excavation rather than decarbonization of electricity generation. Money for the excavations must come from somewhere, and it is highly unlikely that taxes would generate these funds. Ratepayer subsidies serve as an alternative to taxes in achieving the desired result. Additionally, companies commonly use this process where they must make significant front-end investments for change,<sup>110</sup> which is exactly the situation here. Excavations and the establishment of infrastructure to prevent future spills require substantial investment at the start,<sup>111</sup> and internal subsidies could

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102. Jim Rossi, *Carbon Taxation by Regulation*, 102 MINN. L. REV. 277, 279 (2017).

103. *Id.* at 301.

104. *Id.* at 302.

105. *Id.* at 307.

106. *Id.* at 309.

107. *Id.* at 309–10.

108. *Id.* at 315.

109. *Distributed Generation of Electricity and Its Environmental Impacts*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/energy/distributed-generation-electricity-and-its-environmental-impacts> [https://perma.cc/KXS7-PTWS].

110. Rossi, *supra* note 102, at 309–10.

111. See, e.g., Catherine Morehouse, *Duke Agrees to Largest Coal Ash Cleanup in US After Years of Fighting with Environmentalists*, UTIL. DIVE (Jan. 2, 2020), <https://www.utilitydive.com/news/duke-agrees-to-largest-coal-ash-clean-up-in-us-after-years-of-fighting-with/569699/> [https://perma.cc/FR2C-LTWE]. For example, Duke’s excavations in North Carolina are projected to take up to fifteen years and cost up to \$9 billion. *Id.*

quickly raise those funds. Therefore, South Carolina utilities may argue, raising rates to pay for the cleanups is a viable solution that has already yielded successful results in an analogous situation.

However, the internal subsidies discussed above also have associated problems, many of which are applicable to the coal ash situation. First, these subsidies distort the prices of electricity, making them less responsive to changes.<sup>112</sup> In South Carolina, this price distortion means that once utilities have completed the massive project of excavating their coal ash, it will be easy for rates to remain at the higher level necessary to pay for that project. In essence, customers will continue to pay for a service that the utility has already completed. Therefore, while it makes sense to raise rates slightly to cover some of the costs of the cleanups, expecting consumers to pay for everything is a step too far.

Internal subsidies also face equity problems. Because the electricity system crosses state boundaries, a single state may pay increased rates for a certain benefit, while the entire surrounding region receives the benefit without paying.<sup>113</sup> Equity concerns with customer subsidies are applicable to South Carolina coal ash costs as well.<sup>114</sup> Utilities often cross state lines, meaning that states could be responsible for cleanup costs outside their own borders. In May 2019, Duke Energy attempted to recover costs of coal ash cleanup in North Carolina from South Carolina ratepayers, which South Carolina regulators disallowed.<sup>115</sup> Allowing cost recovery would make it much easier for utilities like Duke to recover costs for errors in other states from South Carolina ratepayers. Reducing the amount utilities can recover from their customers could mitigate this equity imbalance across state lines.

Finally, other scholars argue that electricity firms now have more information available about the risks of decarbonization, meaning investors should be able to plan for that risk, rather than insure themselves with cost recovery.<sup>116</sup> Similarly, the conversation around coal ash started a long time ago. Even though the DCCREU was not passed until 2014, considerations on the rule began after the Kingston spill in 2008.<sup>117</sup> This clearly indicates that concern over coal ash storage was widespread at this point—coal-burning utilities must have been aware of the controversy. Furthermore, utilities should have started planning for more comprehensive storage, as it was clearly the direction the industry was headed—the EPA certainly was not going to make storage requirements less rigorous. It is thus reasonable to

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112. See Rossi, *supra* note 102, at 317.

113. *Id.* at 313.

114. See *id.* at 318.

115. Gheorghiu, *supra* note 101.

116. See Emily Hammond & Jim Rossi, *Stranded Costs and Grid Decarbonization*, 82 BROOK. L. REV. 645, 676–77 (2017).

117. Daniels, *supra* note 61, at 97.

expect coal utilities to plan for that cost increase just like any other business, rather than foist all the costs onto ratepayers. Perhaps it is reasonable to allow cost recovery before utilities could reasonably realize that their current methods of storage were unsafe, but once it was clear that those methods were unsafe, cost recovery no longer makes sense. Consumers should not have to pay for the reasonable costs of running a business.

Furthermore, the same policy considerations do not apply to coal ash excavation and electricity decarbonization. In the case of decarbonization, regulators encourage utilities to switch to renewable resources for which they would not otherwise pay. This takes a baseline solution and improves it, resulting in a net gain for society at large. Coal ash excavation, on the other hand, is different. Change is desired, not to improve a baseline situation but to avoid massive public health crises. Avoiding public health crises is the bare minimum that people should expect of utilities, not a supplemental service the entire costs of which consumers must pay. Of course, one could argue that carbon-emitting electricity generation causes a public health crisis of its own: climate change. However, no one single utility is directly responsible for climate change, while each individual utility is directly responsible for its coal ash leakage. Therefore, utilities must take a more active role in its prevention. When the responsibility is this immediate, the bulk of costs should fall on the utility itself.

One response utilities may make to these arguments relates to credit for future loans. The utilities may argue that if they absorb the costs of coal ash excavations, then that makes its behavior more financially risky due to the increased expense. With this more expensive behavior, the cost of obtaining loans goes up, hurting ratepayers in the future. Whether making credit more expensive or allowing cost recovery ultimately raises prices more for consumers is a complicated economic question beyond the scope of this Note. However, the goal in South Carolina should first and foremost be protecting the public health, and the best way to further this goal is to send a strong message to utilities that it will be expensive to imprudently store waste. Therefore, the bulk of costs should fall on the utilities.

*B. Hydroelectric Power and FERC Orders to Dams: Charges of Cost Allocation as Federal Government Overreach*

Decarbonization of the electricity sector is not the only area of debate over whether power utilities can recover costs from consumers. Cost recovery by utilities in general is governed by certain overarching legal standards. State regulators set the rates for electric utilities, and these rates must “provide a reasonable opportunity to earn a fair rate of return on [the utility’s]

investment.”<sup>118</sup> According to the controlling Supreme Court case on the subject, in determining “just and reasonable” rates, “it is the result reached not the method employed which is controlling.”<sup>119</sup> In other words, regulators have a lot of flexibility in determining cost recovery so long as the results are reasonable (i.e., they do not bankrupt the company).<sup>120</sup> This broad authority for cost allocation has generated controversy in several areas—coal ash excavations, of course, and hydroelectric power operations.<sup>121</sup>

In the hydroelectric power industry, which the Federal Energy Regulatory Commission (FERC) governs under the Federal Power Act,<sup>122</sup> the government can require a utility’s investors to pay certain costs associated with running their power plants.<sup>123</sup> For example, in 1994, FERC declared that it could order the decommissioning of hydroelectric and that it could require the dam operator to pay associated costs.<sup>124</sup> Decommissioning can mean simply stopping operations or removing all dam infrastructure and restoring the area to its original condition.<sup>125</sup> This declaration sparked considerable controversy.

Some argue that a prohibition on cost allocation for dam decommissioning exceeds FERC’s authority because it asks hydroelectric dam operators to pay costs that they did not contemplate when beginning their projects.<sup>126</sup> First, the legislative history of the Federal Power Act suggests that Congress did not intend operators to bear decommissioning costs because discussions focused on what governments could do for utilities, not the other way around.<sup>127</sup> In addition, the Federal Power Act itself mandates that FERC cannot change an existing license unless the operator agrees to the changes.<sup>128</sup> In fact, even Congress lacks this power—although Congress reserved the right to change the Federal Power Act itself, it noted that it could not change preexisting licenses.<sup>129</sup> Because FERC derives its power from Congress, if Congress cannot alter preexisting licenses, surely FERC is unable to alter them too.<sup>130</sup> Finally, FERC promulgated this particular regulation as a policy

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118. LAZAR, *supra* note 84, at 49.

119. Fed. Power Comm’n v. Hope Nat. Gas Co., 320 U.S. 591, 602 (1944).

120. LAZAR, *supra* note 84, at 53.

121. Carlos M. Marquez, II, *Federal Power Act Limitations on FERC Dam Decommissioning Authority: Shielding Preexisting Licensees and Revisiting Trust Funds to Protect the Public Interest*, 27 COLO. NAT. RESOURCES ENERGY & ENVTL. L. REV. 157, 171 (2016) (noting numerous disagreements between FERC and hydroelectric power operators).

122. *Id.* at 161, 169.

123. *See id.* at 161.

124. *Id.*

125. *Id.*

126. *See, e.g., id.* at 161–62.

127. *Id.* at 183.

128. *Id.*

129. *Id.* at 183–84.

130. *Id.*



statement, and policy statements “merely announce” the position an agency will take in the future—they may not have the force of law.<sup>131</sup> Therefore, the policy should not be binding.<sup>132</sup> For all these reasons, scholars argue, FERC does not have the power to forbid hydroelectric dam operators from recovering closure costs.

Unfortunately, it is unclear how these arguments hold up in court, as cases associated with dam decommissioning cost allocation in recent years have settled. In 1991, FERC issued an order to remove the Edwards Dam at the owners’ expense.<sup>133</sup> However, the case settled by transferring ownership of the dam to the State of Maine.<sup>134</sup> Similarly, in 2012 and 2014, a multiparty settlement led to decommissioning the Great Works Dam and Veazie Dam.<sup>135</sup> There have been no recent cases in the area since then. Therefore, this Note will consider hypothetical arguments in addressing the analogous situation of decommissioning a hydroelectric dam.

Applied to the case of coal ash excavations, one could argue that, similar to FERC requiring operators to pay for decommissioning their own dams, it would be an overreach of government regulatory power to require utilities to pay for coal ash cleanups. Critics argue that it is unfair for FERC to force operators both to close dams and to pay for the costs when those requirements were not part of their original agreement.<sup>136</sup> Similarly, for the coal ash situation, state governments would mandate the cleanups and force utilities to pay for the cleanups, a cost to which utilities did not originally agree. The requirement of dry, lined coal ash storage in South Carolina is new—impoundment ponds were originally an acceptable form of storage.<sup>137</sup> Therefore, government regulators are altering preexisting agreements and, in essence, forcing industry to spend money in a certain area. The coal-burning utilities will argue this, too, is an overreach of government authority.

However, the legal bases of closing dams compared with properly storing coal ash are entirely different: dam operators reasonably expected that FERC would not change preexisting agreements,<sup>138</sup> while utilities in South Carolina cannot reasonably have such an expectation. The policy statement on dam decommissioning costs originated with FERC, a federal government agency.<sup>139</sup> Under the Federal Power Act, FERC had an agreement with hydroelectric dam operators not to alter preexisting agreements, including

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131. *Id.* at 187.

132. *Id.*

133. *Id.* at 171–72.

134. *Id.*

135. *Id.* at 173–74.

136. *Id.* at 161–62.

137. See *South Carolina’s Coal Ash*, *supra* note 5; *South Carolina Leads*, *supra* note 4.

138. Marquez, *supra* note 121, at 161–62.

139. *Id.*

ones on cost allocation.<sup>140</sup> The entity that would mandate South Carolina utilities to bear the costs of coal ash excavations, on the other hand, would be state electricity regulators.<sup>141</sup> No comparable agreement on cost allocation exists between coal-burning utilities and South Carolina electricity regulators—just the opposite, in fact. By operating in South Carolina, utilities understand that state government plays a role in setting electricity costs each year. Electricity rates change frequently, and state regulators regularly revise their decisions on what those rates should be.<sup>142</sup> Unlike hydroelectric dam operators and FERC, state utilities and state regulators have no expectation that price determination will remain static forever. Therefore, the argument that state regulators would be overreaching their authority in prohibiting the recovery of coal ash cleanup costs fails—state regulators are well within their rights to prohibit such cost recovery.

Furthermore, there are policy concerns present in coal ash cleanups that simply are not present in the closing of hydroelectric dams. First, coal ash cleanups do not involve the closure of a powerplant; rather, they involve modifying the way in which power plants are run.<sup>143</sup> When a state government prohibits coal ash cleanup cost recovery, it does not reach as far as a state government closing a hydroelectric dam and, therefore, is less likely to spark overreach concerns. Additionally, the level of risk is different for coal ash and hydroelectric dams. Dams do pose some dangers to the surrounding areas, such as the risk of dam breaches and overflows as well as damage to ecosystems by changing the flow of rivers.<sup>144</sup> However, the health risks associated with coal ash leakage are far greater. The toxicants in coal ash can damage all the major organ systems, cause developmental issues, and sometimes lead to death.<sup>145</sup> Additionally, coal ash is a more widespread problem—over a quarter of U.S. energy comes from coal, while hydropower accounts for only 7%.<sup>146</sup> Because the health risks are more dangerous and more widespread, the government urgently needs to act on this issue. Therefore, there is a stronger policy concern for state regulators to weigh in on the coal ash issue.

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140. *Id.* at 163, 183–84.

141. LAZAR, *supra* note 84, at 30.

142. *Id.* at 40.

143. *Coal Ash (Coal Combustion Residuals, or CCR)*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/coalash> [<https://perma.cc/Q2U8-TV2A>] (noting that EPA regulations require only recycling and safe disposal methods).

144. Marquez, *supra* note 121, at 164, 167.

145. GOTTLIEB ET AL., *supra* note 4, at vii.

146. *Frequently Asked Questions: What Is U.S. Electricity Generation by Energy Source?*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3> [<https://perma.cc/US4P-N9HU>].

In conclusion, the criticisms leveled at prohibiting cost recovery for hydroelectric dam closure do not apply to prohibiting or limiting cost recovery for coal ash disposal.

*C. Natural Gas Leaks: Cost Allocation as a Driver of Efficiency*

Yet another area that raises the issue of whether utilities can recover certain costs from ratepayers is the natural gas industry. Just as with other public utilities, state commissions play a role in setting natural gas rates for electricity consumers.<sup>147</sup> These distributors move natural gas through local pipelines to consumers' houses, but not all gas arrives at its final destination.<sup>148</sup> Many factors contribute to this unaccounted-for gas, but at least some of the loss is due to pipe leaks.<sup>149</sup> These leaks allow methane, a potent greenhouse gas, into the atmosphere, contributing to global climate change.<sup>150</sup> In addition to climate change concerns, gas leaks can cause public health issues by collecting in pockets underground that subsequently explode.<sup>151</sup> Gas distributors have the potential to mitigate these problems by repairing leaks and ensuring that meters are accurate.<sup>152</sup>

Despite the fact that mitigation measures are available, most state regulators do little to discourage the loss of natural gas between the source and end user.<sup>153</sup> Instead, state commissions usually use rate-setting formulas that allow gas distributors to recover the cost of all the gas they purchase.<sup>154</sup> In other words, regulators generally allow natural gas utilities to raise electricity rates to pay for the gas that they purchased but then lost before delivering to consumers.<sup>155</sup> There are exceptions to this policy, however. New York regulators adjust rates to make up for lost and unaccounted-for gas, which reduces the amount of lost gas and lowers rates for consumers.<sup>156</sup> Pennsylvania has a similar version of the same policy, and Massachusetts is

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147. See Liam Holland, Note, *Footing the Bill for Natural Gas Leaks: Why States Should Limit Cost Recovery of Lost and Unaccounted for Gas*, 58 B.C. L. REV. 317, 332 (2017).

148. See *id.* at 319–20, 323–24.

149. *Id.* at 319–20.

150. *Id.* at 322.

151. See, e.g., *id.* at 323 (explaining that public attention has been drawn to natural gas leaks underground, forming pockets, that can result in large explosions, such as one in San Bruno, California).

152. *Id.* at 320.

153. See *id.* at 319–20 (noting that state regulators permit gas companies to adjust rates to recover the cost of unaccounted for gas instead of forcing them to mitigate natural gas leaks).

154. See *id.* at 317, 329.

155. See *id.* at 329 (“These formulas provide that a company may recover the total cost of the gas purchased by the company through sales to customers.”).

156. See *id.* at 330–31.

considering adopting the same.<sup>157</sup> More states should follow New York and Pennsylvania's lead and limit cost recovery for lost natural gas because the current system fails to incentivize the industry to prevent harmful natural gas leaks.<sup>158</sup>

Were states to limit cost recovery of lost and unaccounted for gas, this restriction would incentivize distributors to control the causes of the leaks, which would reduce public health risks and lower the gas costs for consumers.<sup>159</sup> In a normal industry, these efficiency incentives would be inherent in the market—producers would want to provide their product at the lowest possible cost to remain competitive and encourage consumers to purchase their gas, rather than the gas of their competitors. But the energy sector is not a normal industry; it is a natural monopoly, and the normal efficiency incentives are not present.<sup>160</sup> Requiring gas distributors to pay for missing gas themselves would introduce those efficiency incentives into the market.<sup>161</sup> In this case, efficiency means encouraging distributors to prevent leaks and allowing regulators to mitigate the negative effects of such leaks.<sup>162</sup> Regulators would simultaneously meet public policy objectives by decreasing greenhouse gas emissions and avoiding the negative health effects of gas leak explosions.<sup>163</sup> Additionally, the prohibition would not count as a constitutional confiscation so long as utilities still have the opportunity to make a reasonable return on their investments.<sup>164</sup> Thus, limiting cost recovery for lost and unaccounted for gas would make markets fairer and the public safer.

South Carolina coal-burning utilities undergoing excavation find themselves in a very similar situation to that of the natural gas industry. First, state commissions contribute to setting consumer rates in both industries.<sup>165</sup> Second, both industries cause public health problems without adequate regulations: gas leaks can cause explosions<sup>166</sup> and ingested coal ash can injure humans.<sup>167</sup> Third, both industries have the ability to mitigate the public health

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157. *Id.* at 331–32.

158. *See id.* at 317.

159. *See id.* at 342.

160. *See id.* at 336 (“[C]ommissions have attempted to replace traditional ratemaking with alternative ratemaking approaches that the commissions believe are more likely to provide a monopolistic firm with similar incentives as a firm subject to effective competition.”).

161. *See id.* at 343 (explaining that a capped approach would force gas distributors to take on the burden of escaped gas and lead to market efficiency).

162. *See id.* at 344.

163. *Id.* at 346.

164. *Id.* at 350.

165. *Id.* at 332.

166. *See id.* at 323 (explaining that escaped natural gas forms pockets underground that can explode).

167. *See* GOTTLIEB ET AL., *supra* note 4, at vii.

problems they are creating: natural gas distributors can repair leaks<sup>168</sup> and coal-burning utilities can excavate and properly store their coal ash.<sup>169</sup> The two are also similar in the state commissions' attitude towards their consumer cost recovery. Regulators generally allow both types of utility to recover costs associated with the public health problem from consumers through rate setting.<sup>170</sup> Because the situations are so analogous, the same result will follow from both: neither type of utility has incentives to mitigate the negative public health effects because they know customers will fully reimburse them no matter what problems the utilities cause.<sup>171</sup>

Because these two situations are so similar, the solution to the problem should be similar as well. South Carolina regulators should emulate states like New York and limit cost recovery by utilities to prevent the dangerous public health risks of coal ash disposal, just as New York has done for the dangerous public health risk of natural gas leaks.<sup>172</sup> The same incentive problem applies here. If South Carolina utilities undergoing coal ash excavations can recover cleanup costs from consumers, they have no incentive to prevent future leaks. They will not suffer monetary harm from the leaks in the form of reduced profits, so they have no reason to create solutions that will avoid those costly leaks. But if South Carolina utilities have to lose profits when they store coal ash improperly, they will have an incentive to avoid coal ash leaks in the future. South Carolina should fix the incentive problem and prevent future negative health effects by limiting cost recovery in this area.

Opponents may argue that this concern does not apply because utilities are already cleaning up their coal ash, making incentives unnecessary in the future. However, these companies still need incentives because the dangers of coal ash do not end with the one-time cleanup of specific sites. Simply storing coal ash is not enough to mitigate the public health issues—even dry, lined pits require monitoring to prevent future leaks.<sup>173</sup> Commissions need to incentivize utilities to continuously monitor their sites, not just to perform one-time cleanups. Therefore, incentives via cost-recovery prohibitions will serve as a benefit far into the future. Additionally, utilities need incentives not only to excavate existing sites but also to build any additional sites correctly. And even if these utilities are not building more coal plants any time soon,

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168. Holland, *supra* note 147, at 320.

169. *See generally* GOTTLIEB ET AL., *supra* note 4, at 7 (“The greatest level of protection is afforded by composite liners, constructed from various layers . . .”).

170. *See* Holland, *supra* note 147, at 319.

171. *See id.* at 317–18 (showing that even though customers are freezing to death, these companies can recover billions of dollars in gas lost before it reaches the customer).

172. *See id.* at 330–31.

173. *See* GOTTLIEB ET AL., *supra* note 4, at 7, 23 (noting that monitoring is included in the best elements of preventative hazard designs).

mandating consequences for spills sends a message that utilities should work to mitigate public health dangers inherent in other types of electricity as well.

As a counterargument, utilities may assert that, even if regulations prohibit their recovering from any future spills, states should allow them to recover costs from the one-time cleanup of specific sites. After all, incentives cannot apply retroactively—no matter how great the consequences, they cannot un-spill the coal ash. However, limiting cost recovery has implications far beyond this specific case. As mentioned previously, limiting cost recovery is important in establishing a precedent for the future. Although states cannot change this instance of spillage, forcing utilities to pay the price for the public health risks they cause informs utilities that they should curtail risky behavior in other areas. Just as they had to pay for coal ash leaks, so too will they have to pay for other crises. This will encourage utilities, even those outside of the coal industry, to use the safest practices possible. Thus, incentives remain a powerful tool for promoting safe practices in a variety of contexts, ranging from one-time removals to lined, dry storage.

#### *D. Nuclear Power: Cost Allocation Providing Market Competition*

One final area where utilities can recover costs through raising rates is the nuclear power industry. In the late 1960s and early 1970s, increased demand for energy combined with increased enthusiasm for nuclear power caused many utilities to invest in nuclear power plants.<sup>174</sup> However, projected demand increases did not occur, and the Three Mile Island incident<sup>175</sup> damaged public trust in nuclear power.<sup>176</sup> As a result, many utilities canceled their construction plans for nuclear power plants and, in most instances, recovered the cancellation costs through rate increases.<sup>177</sup> Indeed, South Carolina currently allows nuclear plans to use cost recovery measures.<sup>178</sup>

However, state commissions did not permit cost allocation in every nuclear power case.<sup>179</sup> For example, a Pennsylvania law required setting rates

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174. Hammond & Rossi, *supra* note 116, at 653.

175. See Marie Cusick, *Forty Years After a Partial Nuclear Meltdown, a New Push to Keep Three Mile Island Open*, NPR (Mar. 28, 2019), <https://www.npr.org/2019/03/28/707000226/40-years-after-a-partial-nuclear-meltdown-a-new-push-to-keep-three-mile-island-o> [<https://perma.cc/2MFV-D92C>]. In March 1979, a reactor in the Three Mile Island Nuclear Plant in Pennsylvania had a partial meltdown when a water pump malfunctioned. *Id.* Although only a small amount of radiation was actually released, widespread fear caused thousands of people to flee the area. *Id.* The remaining functioning reactor reopened in 1985, and although it has been losing money, many want it to remain open to continue to provide zero-emission power. *Id.*

176. See Hammond & Rossi, *supra* note 116, at 653 (“Three Mile Island prompted concerns about the safety of nuclear power . . .”).

177. See *id.*

178. See *id.* at 670.

179. See *id.* at 654.

without consideration of spending on generation facilities that a utility planned but did not build, even if the expenditures were prudent at the time.<sup>180</sup> In *Duquesne Light Co. v. Barasch*, the Supreme Court held that Pennsylvania's policy was permissible and did not violate the Takings Clause of the Constitution,<sup>181</sup> drawing heavily on *Hope*'s holding that the Constitution protects the net effect of rates, not the formula for setting rates.<sup>182</sup> It expressly declined to mandate rate setting based on "prudent investment," noting that this would be contrary to the Court's position against mandating a single rate-making formula.<sup>183</sup> It did place a limitation by noting that states cannot switch arbitrarily between formulas for rate setting, but the Court held that Pennsylvania had done no such thing.<sup>184</sup>

*Duquesne* indicates that South Carolina would prevail in any Takings Clause challenges should the state decide to prohibit cost allocation for coal ash excavations, so long as it did not change its formula arbitrarily.<sup>185</sup> Just because regulators once considered wet impoundments to be safe storage structures does not mean they must continue to permit cost recovery. In *Duquesne*, the court held that regulators could deny cost recovery for nuclear generation that ended up producing zero electricity, even if the regulators found the utilities' decision was prudent at the time.<sup>186</sup> Similarly, regulators should deny cost recovery for coal ash storage because, although they once considered it prudent, regulators now realized that it is unsafe. The past designation of prudence does not necessarily lead to the current allowance of cost recovery. All South Carolina must do is apply this formula consistently.

Although utilities continue to use cost recovery in South Carolina, that may be changing as many claim it no longer makes sense. Some argue that the cost recovery in previous decades was acceptable because utilities built nuclear plants largely due to encouragement from regulators to increase electricity generation.<sup>187</sup> Additionally, investors may not have paid for the new plants without the assurance that consumers would pay for risks.<sup>188</sup> However, the "insurance" that customers provided against risk probably encouraged utilities to overinvest in new nuclear power plants—insulated

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180. See *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 299–300 (1989) (showing that cost will only be recoverable in the rate base once the facility actually becomes "used and useful").

181. See *id.*

182. *Id.* (citing *Fed. Power Comm'n v. Hope Nat. Gas. Co.*, 320 U.S. 591, 602 (1944)).

183. See *id.* at 315.

184. See *id.* (noting that switching back and forth without good reason might cause investors to bear the risk of bad investments sometimes while not getting the benefit of good investments at others, raising constitutional questions).

185. See *id.* at 299, 315.

186. See *id.* at 299–300.

187. See *Hammond & Rossi*, *supra* note 116, at 653 ("[T]he regulatory process encouraged investment in large base load power generation plants.").

188. See *id.* at 654–55.

from costs, utilities built more plants than necessary, exacerbating the oversupply.<sup>189</sup> Additionally, costs fell on consumers for something that was not their fault, but rather the utilities' fault.<sup>190</sup> While permitting cost recovery allowed for the production of new electricity generation, it also had several drawbacks.

Just as it was for nuclear power, allowing cost recovery is sometimes necessary to convince utilities to make risky but important changes that a normal company might not wish to undertake.<sup>191</sup> However, the issues with cost recovery in the nuclear industry indicate some problems with cost recovery overall. First, the expectation that utilities can recover costs leads those companies to overstate the financial burden that new regulations will place on them.<sup>192</sup> In other words, utilities will use newly implemented regulations against the commissions as a way to justify raising rates. Second, consumers should not be responsible for ordinary business risks that utilities face.<sup>193</sup> It is true that utilities cannot control regulatory changes, making it seem unfair for them to pay for these changes themselves.<sup>194</sup> However, there are many risks that utilities can control, the same as any other company, and consumers should not be responsible for the costs of these risks.<sup>195</sup> Finally, utilities and regulators often ignore the positive effects of regulations when setting rates for cost recovery, such as benefits regulatory changes could have on utilities' business and on society more broadly.<sup>196</sup> Therefore, cost recovery can lead to many negative effects in the nuclear power sector.

Just as it was for the natural gas industry, the nuclear utility situation is analogous to the coal ash excavation situation. For both nuclear and coal-burning plants, utilities made significant investments in a type of power generation that seemed like a good idea at the time—nuclear power companies building more nuclear power plants in the face of increased demand<sup>197</sup> and coal-burning powerplants capitalizing on the cheap storage of coal to meet electricity demand. Then, as time went on, costs ended up being higher than either type of utility had anticipated. For the nuclear industry, the costs were due to plant cancellations.<sup>198</sup> For coal-burning powerplants, on the other hand,

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189. *See id.*

190. *See id.* at 653 (“On the other hand, allowing full cost recovery for every loss a firm would incur due to mistaken investment decisions would unfairly burden customers . . .”).

191. *See id.* at 650.

192. *Id.* at 661.

193. *See id.* at 662.

194. *See id.*; *see also id.* at 652 (“Regulators determining stranded costs in this manner did a poor job of separating the ordinary economic and technological risks that any business investor would expect, from regulatory risks over which firms have little or no control.”).

195. *See id.* at 662.

196. *See id.*

197. *Id.* at 652–53.

198. *See id.*



the costs are due to newly raised standards in coal ash containment as South Carolina starts to require cleanups and storage in dry, lined pits. Both of these cases share a critical timing element: the cost recovery decisions were made after the projects were approved and deemed prudent by regulatory bodies.<sup>199</sup> Thus, the nuclear industry and coal-burning power plants find themselves in very similar situations.

Because the two situations are so similar, the same policy concerns associated with cost recovery for prematurely closed nuclear sites apply to cost recovery for coal ash cleanups. One such concern lies in setting rates appropriately. When deciding how to set high rates in order to pay for coal ash excavation, South Carolina utilities will have the incentive to exaggerate in order to recover more money. The more expensive they say the cleanups are, the more money they can get from consumers. This will make it hard to determine what the reasonable rate should be.

Additionally, consumers should not be responsible for the mistakes of the industry. Utilities may argue that they could not plan for the regulatory changes around coal ash disposal. However, coal ash spills from wet impoundments have been happening for several years—the famous Eden, North Carolina, spill occurred in 2014,<sup>200</sup> and the Kingston, Tennessee, spill occurred in 2008<sup>201</sup>—other coal plants should have recognized the danger of wet impoundments and mitigated the risk in the meantime. Customers should suffer the penalties for this failure; any other business would be responsible for failing to respond to changes in this way, and coal-burning utilities should answer for their failures too.

Finally, if rate setting is to take into account the costs of the excavations, it should take into account the benefits of such cleanups as well. Looking only at financial impacts on investors when setting rates ignores broader benefits.<sup>202</sup> The excavations may be expensive at the time, but they will reduce other costs for utilities in the future. For example, Duke Energy has paid over \$1.36 million to North Carolina and the federal government for restoration after the Dan River spill.<sup>203</sup> If coal-burning utilities store coal ash safely, they can avoid restoration costs like this in the future, benefitting their businesses. Focusing only on the immediate costs of the excavations ignores the potential for these kinds of future savings.

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199. *Id.* at 654.

200. See Shoichet, *supra* note 2.

201. *Id.*

202. See Hammond & Rossi, *supra* note 116, at 663.

203. See John Downey, *Court Action Involving Duke Energy Marks Step Forward in Winding Down Coal-Ash Work at Dan River*, CHARLOTTE BUS. J. (Jul. 19, 2019), <https://www.bizjournals.com/charlotte/news/2019/07/19/court-action-involving-duke-energy-marks-step.html> [<https://perma.cc/P52L-VVKV>].

Therefore, even though South Carolina mandated these costs after state regulators determined current impoundment storage was acceptable, allowing total recovery of compliance costs would yield many negative consequences. For one thing, setting rates appropriately would be a difficult task. But more importantly, states should not totally insulate utilities from risks—they are still companies and, as such, must bear the risks associated with running a normal business.

*E. North Carolina and South Carolina Legislation on Coal Ash: First Steps Towards Cost Allocation Policy*

Most legislation governing the cost allocation of coal ash disposal has taken place only in North Carolina, with the North Carolina Public Utilities Commission and the North Carolina House of Representatives weighing in. While South Carolina legislators have also taken certain steps, they still need to make many decisions regarding cost allocation. However, there has been some resistance in both states towards allowing utilities to recover all costs for the cleanups.

So far, North Carolina has proved hesitant to allow cost recovery. This reflects the fact that a 2017 poll from a renewable advocacy group reported that more than 80% of North Carolinians want Duke Energy itself to pay coal ash excavation costs (although a Duke spokesman argued the surveyors used biased language in writing the question).<sup>204</sup> Despite this, North Carolina has allowed some cost recovery. In 2018, the North Carolina Public Utilities Commission allowed Duke to raise customers' fixed monthly charges by 25%, as well as increase rates to \$232 million, to pay for coal ash excavations.<sup>205</sup> However, this decision does not favor Duke as much as it seems. Duke originally asked to recover much more—\$477.5 million.<sup>206</sup> The Commission also fined Duke millions of dollars for mismanagement of the cleanups and prohibited it from recovering costs of ongoing cleanups, leaving that to the next general rate case.<sup>207</sup> Additionally, the Commission included strong language indicating its displeasure with how Duke's actions had

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204. Robert Walton, *Most North Carolina Residents Don't Want Duke to Charge for Coal Ash Cleanup, Survey Says*, UTIL. DIVE (Mar. 21, 2017), <https://www.utilitydive.com/news/most-north-carolina-residents-dont-want-duke-to-charge-for-coal-ash-cleanu/438564/> [https://perma.cc/2889-B48A].

205. Robert Walton, *Duke's North Carolina Customers Will Pay \$232M for Coal Ash Cleanup*, UTIL. DIVE (Feb. 26, 2018), <https://www.utilitydive.com/news/dukes-north-carolina-customers-will-pay-232m-for-coal-ash-cleanup/517879/> [https://perma.cc/F93T-NUVT].

206. *Id.*

207. *Id.*

impermissibly put North Carolinians at risk.<sup>208</sup> For example, the Commission wrote that Duke's handling of coal ash "placed its customers at risk of inadequate or unreasonably expensive service" and that Duke "admits to pervasive, system-wide shortcomings such as improper communication among those responsible for oversight of coal ash management."<sup>209</sup> All in all, the Commission is clearly displeased with the utility, indicating that degree of fault has played a role in determining whether it should allow utilities to allocate costs. Of course, it remains to be seen how the next general rate case will handle cost recovery.

Moving from the public utilities commission to the legislature, North Carolina's treatment of cost recovery is mostly in limbo in the house and senate. As of 2019, the North Carolina legislature is considering a bill that would prohibit Duke from raising rates to pay for coal ash cleanups in the state.<sup>210</sup> In general, Democrats support the bill, arguing that Duke should be responsible for its own pollution.<sup>211</sup> Republicans, on the other hand, generally oppose the bill, arguing ratepayers benefitted from the cheaply stored coal ash and now should help pay for the consequences of those low prices.<sup>212</sup> The bill needs significant bipartisan support in order to pass, and many believe this is unlikely in the Republican-controlled legislature.<sup>213</sup>

The legislature decided on an issue tangentially related to coal ash costs, however. Another 2019 bill would have allowed Duke to set rates for up to five years at a time, instead of a year at a time, as it is now.<sup>214</sup> Many worried that allowing Duke to consult with state regulators on rates less often would make it easier for Duke to insert coal ash cost recovery into its rates.<sup>215</sup> However, the bill was rejected in the House with very little discussion; legislators wanted to obtain additional input from stakeholders before it made such a drastic change in the way Duke interacts with state regulators.<sup>216</sup> The defeat of this bill indicates that the state is at least wary of Duke's ambitions regarding cost recovery.

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208. See Robert Walton, *North Carolina Regulators Issue Rare Rebuke to Duke with Rate Denial*, UTIL. DIVE (June 25, 2018), <https://www.utilitydive.com/news/north-carolina-regulators-issue-rare-rebuke-to-duke-with-rate-denial/526426/> [https://perma.cc/5WZF-4VZR].

209. *Id.*

210. Morehouse, *supra* note 7.

211. *See id.*

212. *See id.*

213. *See id.*

214. See Catherine Morehouse, *Controversial Duke Multiyear Rate Plan Upended in North Carolina House*, UTIL. DIVE (Aug. 22, 2019), <https://www.utilitydive.com/news/controversial-duke-multiyear-rate-plan-stalls-in-north-carolina-house/561464/> [https://perma.cc/HKN5-NSQX].

215. *See id.*

216. *See id.*

Turning to South Carolina, our state has indicated a similar disposition towards cost recovery, although the conversation between Duke and the state's public utility commission is ongoing. In May 2019, South Carolina regulators cut Duke's rate hike proposal by 30% and disallowed \$333 million of coal ash recovery from North Carolina.<sup>217</sup> Duke is currently seeking a rehearing on these cuts.<sup>218</sup> So far, there does not seem to be any discussion of cost recovery in the South Carolina legislature. It remains to be seen how the public utility commission and lawmakers will address this issue.

## VI. CONCLUSION

In the coming years, there are two main arenas in which South Carolina will determine its position on cost allocation: the South Carolina Public Service Commission (PSC) and the South Carolina legislature. The PSC has the potential to set rates in a way that limits cost allocation on its own. The legislature, meanwhile, has the potential to pass laws directing the PSC to limit cost allocation, similar to the North Carolina House bill. If North Carolina's approach serves any indication, though, it is more likely that action will come from the PSC rather than the legislature. Indeed, Duke Energy is already seeking a rehearing on recent rate cuts, which will force the PSC to decide the issue.<sup>219</sup>

South Carolina's PSC is made up of seven commissioners representing various districts: a chairman, a vice chairman, and five others.<sup>220</sup> Three recently elected commissioners have shown a new level of skepticism towards the electric utilities, with Commissioner Tom Ervin telling Duke: "We are not going to be a rubber stamp. If that has been the historic practice, that's over."<sup>221</sup> This change comes at a time of general distrust of utilities in South Carolina, and with good reason: according to the U.S. Energy Information Administration, our state has the third-highest average residential power costs in the nation.<sup>222</sup> Clearly, the state's PSC will not allow South Carolina utilities to raise rates without a good justification, and, as this Note has shown, little

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217. Gheorghiu, *supra* note 101.

218. Iulia Gheorghiu, *Duke CEO Presses Case Against N.C. Coal Ash Excavation Order, S.C. Rate Ruling*, UTIL. DIVE (May 10, 2019), <https://www.utilitydive.com/news/duke-ceo-presses-case-against-nc-coal-ash-excavation-order-sc-rate-rul/554495/> [<https://perma.cc/M45J-LGQ9>].

219. *See id.*

220. *Commissioners*, S.C. PUB. SERV. COMMISSION, <https://psc.sc.gov/about-us-0/commissioners> [<https://perma.cc/ZM2B-G3DK>].

221. Andrew Brown, *Utility CEO "Disappointed" That SC Regulatory Environment Has Changed*, POST & COURIER (S.C.) (May 11, 2019), [https://www.postandcourier.com/business/utility-ceo-disappointed-that-sc-regulatory-environment-has-changed/article\\_327601a6-7284-11e9-8e0b-637703829f36.html](https://www.postandcourier.com/business/utility-ceo-disappointed-that-sc-regulatory-environment-has-changed/article_327601a6-7284-11e9-8e0b-637703829f36.html) [<https://perma.cc/3R42-463Q>].

222. *See id.*

justification exists for allowing extensive cost allocation for coal ash excavations.

PSC regulators should prohibit cost recovery on the basis of relative degree of fault. Reducing the amount that utilities can recover would have several beneficial effects on South Carolina. First, it would avoid the market inefficiencies inherent in cost recovery, such as making prices less responsive to market conditions. Additionally, it would incentivize utilities to be more careful in storing waste because they know cleanups will be expensive in the future. For these reasons, the PSC should limit cost recovery.

The utilities' main counterargument will likely be that they should not be financially responsible for changes in regulations. They have a special status as government-regulated businesses and should not be penalized for decisions of the government over which they have no control. And, to a certain extent, the utilities are correct on this point. When they have no way of knowing what the government is going to do, they should not be responsible for the changes the government makes. In that case, cost allocation is a perfectly reasonable way to compensate utilities. The people of South Carolina, through the state government, placed a burden on them, and therefore the people of South Carolina should pay for it. However, it is a different story when the utility should reasonably know an activity is imprudent. In that case, utilities should understand that regulators will require them to cease the imprudent activity, just as any normal business would understand that customers will no longer patronize them if their service is dangerous. The only difference is that normal businesses are regulated by market competition, while utilities are regulated by the government. Utilities should know that the government will prevent them from taking imprudent actions, and they are therefore financially responsible for deciding to take those actions anyways.

Coal ash excavations should be held to this standard. Coal-burning utilities should be allowed to recover costs for coal ash storage before they knew wet storage was dangerous. At that point, they could not predict that the government would one day require them to change their storage practices. But once the danger of unlined impoundment ponds became clear, and they took unsafe actions anyways, they must be held responsible. At that point, any reasonable utility should understand that they will be required to update to the safe method in the future and prepare for that eventuality. Therefore, the South Carolina PSC should prohibit cost recovery for imprudent utility actions.

Of course, it would be difficult to take individual utility actions one at a time from the beginning of coal ash storage and determine whether or not they are prudent. An easier alternative could be based on time. For instance, the PSC could pick a date after which it was unreasonable to continue wet impoundment storage of coal ash. Utilities could recover costs for actions taken before that date, but not for actions taken after that date. Limiting

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recovery in this way would preserve the benefits of limiting cost recovery while addressing the concerns of utilities. It ensures that utilities do not benefit from knowingly using unsafe practices.

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