Articles

Promise, Peril, and Procedure: The Price-Anderson Nuclear Liability Act

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INTRODUCTION

Since its discovery and development in the opening years of World War II, nuclear power has been a source of both promise and peril. Initial enthusiasm gave way to public skepticism in the latter third of the 1900s, bringing an initial burst of civilian nuclear power to a halt, particularly in the United States. More recently however, in the face of increasingly dire risks associated with carbon emissions and global warming, environmental and commercial interests have been arguing for something of a nuclear renaissance in the world and national

power supply.¹ As a dense and largely carbon-free source of power, nuclear energy provides one path away from the carbon-heavy sources that characterize energy production in nearly every nation in the world.²

In the face of this promise, however, there is accompanying peril; nuclear power presents risks that many believe should preclude nuclear power from becoming a more dominant part of our energy economy.³ Among these risks are the problems associated with the need to find a safe, long term storage location for the nuclear waste that is generated by the predominant nuclear power technologies—a vexing problem that remains politically and scientifically fraught.⁴

Of all the threats posed by nuclear power, however, perhaps the most significant in the mind of the public is the risk of a nuclear plant's catastrophic failure, and the subsequent release of significant radioactive material into local and global ecosystems. In the seventy years of commercial nuclear power, we have experienced two such major nuclear power plant accidents: Fukushima Daiichi in Japan in 2011, and Chernobyl in the Soviet Union in 1986.⁵ If a similar

^{1.} See, e.g., David Biello, The World Really Could Go Nuclear, SCI. AM. (Sept. 14, 2015), https://www.scientificamerican.com/article/the-world-really-could-go-nuclear/; Eric Holthaus, It's Time to Go Nuclear in the Fight Against Climate Change, GRIST (Jan. 12, 2018), https://grist.org/article/its-time-to-go-nuclear-in-the-fight-against-climate-change/; Staffan A. Qvist & Barry W. Brook, Potential for Worldwide Displacement of Fossil-Fuel Electricity by Nuclear Energy in Three Decades Based on Extrapolation of Regional Deployment Data, PLOS ONE (May 13, 2015), http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0124074.

^{2.} Of all national economies, only France generates a majority of its power from nuclear sources, with approximately seventy-five percent of its power coming from nuclear plants, and another sixteen percent from renewable sources such as hydropower, wind, and solar. See Power Generation by Energy Source, RTE, https://www.rte-france.com/en/eco2mix/eco2mix-mix-energetique-en (last visited Jan. 19, 2019). China, the world's largest emitter of carbon (though it is a lower carbon emitter on a per-capita basis than most developed nations) is currently engaged in a plan to increase nuclear capacity by seventy percent over the next decade. See Nuclear Power in China, WORLD NUCLEAR ASS'N, http://www.world-nuclear.org/information-library/country-profiles/countries-a-f/china-nuclear-power.aspx (last updated Jan. 2019).

^{3.} See, e.g., Nathanael Johnson, Nukes of Hazard, GRIST (Apr. 11. 2018), https://grist.org/article/nuclear-is-scary-lets-face-those-fears/ (describing the process as one "fraught with hazards").

^{4.} Cf., e.g., Christopher M. Keegan, What's Worse, Nuclear Waste or the United States' Failed Policy for Its Disposal?, 49 U. RICH. L. REV. 1265, 1266 (2015) ("As a result of overly restrictive legislation and political fighting, the United States has been unable to devise a solution to the problem of where to safely store the ever-increasing stockpile of nuclear waste.").

^{5.} In 1990, the International Atomic Energy Agency (IAEA) established an International Nuclear Event scale that ranks the seriousness of nuclear events on a scale from 0 to 7, with level 7 representing "major" accidents involving a "[m]ajor release of radioactive material with widespread health and environmental effects requiring implementation of planned and extended countermeasures." INES: The International Nuclear and Radiological Event Scale, INT'L ATOMIC ENERGY AGENCY, https://www.iaea.org/sites/default/files/ines.pdf (last visited Jan. 19, 2019). The Chernobyl and Fukushima events are the only two level 7 events. Cf. David Smythe, An Objective Nuclear Accident Magnitude Scale for Quantification of Severe and Catastrophic Events, PHYSICS TODAY (Dec. 12, 2011), https://physicstoday.scitation.org/do/10.1063/PT.4.0509/full/ (ranking nuclear accidents on a different scale based solely on the amount of radiation released to the environment, ranking Chernobyl, Three Mile Island, and Fukushima as the worst accidents, in descending order). But see Geoff Fukushima's Uncertainty Problem, NATURE (July 18. https://www.nature.com/news/fukushima-s-uncertainty-problem-1.11031 (noting uncertainty regarding amount of radiation released from Fukushima).

event were ever to occur in the United States,⁶ it would impose many billions of dollars in economic, environmental, and social costs; many estimates place the costs of the Fukushima and Chernobyl incidents, for instance, at nearly \$500 billion each.⁷

Under the current version of a sixty-year-old statute, however, the public's ability to recover damages from such a disaster in the United States would be capped at merely \$13.8 billion.⁸ Pursuant to that statute, the amended Price-Anderson Nuclear Liability Act of 1957,⁹ any additional losses from personal injury, property damage, loss of business, or otherwise would be uncompensated in the absence of further congressional action.¹⁰ The operator of the facility itself would be responsible for only \$375 million of those damages ¹¹—an amount that may well be less than one thousandth of the total damages incurred by the public as the result of the disaster. The total damages that the entire nuclear industry would have to pay as a result of such a disaster would be less than the \$20.8 billion settlement agreed to by a single company—British Petroleum—in settling the civil litigation arising out of the 2010 Deepwater Horizon oil spill in the Gulf of Mexico.¹²

The Price-Anderson Act was originally justified as a necessary step to ensure the development of a private nuclear power industry. Although (as

^{6.} The Three Mile Island incident near Harrisburg, Pennsylvania, in 1979, was classified by the IAEA as a level 5 event. The American Society of Mechanical Engineers (ASME) estimated the costs of the Fukushima and Chernobyl disasters to have totaled approximately \$500 billion each, with the Three Mile Island incident in Pennsylvania costing much less, with the largest cost being the loss of the reactor. See AM. SOC'Y OF MECHANICAL ENGINEERS, FORGING A NEW NUCLEAR SAFETY CONSTRUCT 3, 88–89 (2012) (on file with author) [hereinafter FORGING A NEW NUCLEAR SAFETY CONSTRUCT]. But see Smythe, supra note 5 (ranking Three Mile Island higher).

^{7.} Forging a New Nuclear Safety Construct, *supra* note 6, at 86–88 (estimating the costs of the Fukushima and Chernobyl disasters to have totaled approximately \$500 billion each, with the Three Mile Island incident in Pennsylvania costing somewhere between one and two billion dollars); *see also Efforts for Reconstruction of Tohuku*, JAPANESE RECONSTRUCTION AGENCY, http://www.reconstruction.go.jp/english/ (last visited Jan. 19, 2019) (estimating reconstruction costs alone at \$315 billion).

^{8. 42} U.S.C. § 2210(e) (2012). The statute sets the limit of liability to a maximum amount per licensed facility, as adjusted by inflation by subsection (b). Primary insurance for each facility is set at \$450 million, while the maximum secondary liability is currently set at \$131,056,000 per facility, see 10 C.F.R. § 140.11(a)(4) (2018), and there are 102 licensed nuclear facilities in the United States, for a total maximum insured liability of \$13.8 billion. See U.S. NUCLEAR REGULATORY COMM'N, BACKGROUNDER: NUCLEAR INSURANCE AND DISASTER RELIEF 1 (2018), https://www.nrc.gov/docs/ML0327/ML032730606.pdf (describing calculations under January 2018 values for liability limits).

^{9.} Price-Anderson Nuclear Liability Act of 1957, Pub. L. No. 85-256, 71 Stat. 576 (codified as amended in scattered sections of 42 U.S.C.). It has been amended and extended on four significant occasions: in 1965, 1975, 1988, and 2005. The liability limitation that is the core of the statute is currently codified at 42 U.S.C. § 2210; critical definitions are found at 42 U.S.C. § 2014.

^{10.} See 42 U.S.C. § 2210(e)(2)

^{11.} Nuclear Liability Insurance (Price-Anderson Act), NAT'L ASS'N OF INS. COMMISSIONERS, https://www.naic.org/cipr_topics/topic_nuclear_liability_insurance.htm (last updated Nov. 30, 2018).

^{12.} Devlin Barrett, U.S., BP Finalize \$20.8 Billion Deepwater Oil Spill Settlement, WALL ST. J. (Oct. 5, 2015, 3:29 PM), http://www.wsj.com/articles/u-s-says-20-8-billion-bp-spill-settlement-finalized-1444058619; Deepwater Horizon, U.S. DEP'T JUST., https://www.justice.gov/enrd/deepwater-horizon (last visited Jan. 19, 2019).

Congress and the industry regularly repeated at the time) the risk of a catastrophic disaster was "exceedingly low," the risk nevertheless existed, which gave power companies and their potential insurers pause. ¹³ Given that the private insurance market was unwilling to insure possible losses reaching much above \$60 million on one hand, ¹⁴ and on the other, potential operators who were unwilling to proceed with uninsured risk that might run to ten or a hundred times that (by estimates at the time), civilian nuclear power seemed to be at a standstill.

Congress stepped in with the Price-Anderson Act, which (as originally enacted) capped operator liability at \$60 million, but provided governmental indemnification of damages up to a cap of \$500 million. Although it does not appear that the legislation was preceded by a careful analysis of *whether* such a civilian industry was necessary, it is quite clear that the Act nevertheless did its work and encouraged the development of the earliest nuclear plants in the United States. Proponents in Congress argued that the Act not only encouraged nuclear power development, but that, in the event of a disaster, the Act ensured that the public would recover a significant part of any damages (even if the cap meant that it might not recover all of them). In subsequent years, the form and nature of the liability limits, not to mention the source of funds, have changed, but the fact of the liability limit—and its likely influence on the nuclear industry—has not.¹⁶

One might certainly challenge whether the Act's liability limit remains a reasonable policy choice in light of the development of nuclear technology, the availability of alternative sources of power (some of which are highly carbon intensive), and current assessments of the risks that nuclear power poses (not to mention the psychological impact that nuclear power and its risks have on the public mind). The Act itself is up for renewal in seven years, and a future renewal

^{13.} George T. Mazuzan & J. Samuel Walker, Controlling the Atom: The Beginnings of Nuclear Regulation 1946–1962, at 93 (1985).

^{14.} See id. at 100 (describing full extent of private insurance coverage availability in 1956 to be, per facility, around \$60–65 million).

^{15.} Price-Anderson Nuclear Liability Act of 1957, Pub. L. No. 85-256, 71 Stat. 576 (codified as amended in scattered sections of 42 U.S.C.). The Act is named after its two primary sponsors, Representative Charles Price (D-III.) and Senator Clinton Anderson (D-N.M.). Both were members (from 1951–1954) of the Joint Committee on Atomic Energy, which had been created by the Atomic Energy Act of 1946, Pub. L. No. 79-585, § 15, 60 Stat. 755, 772–73 (amended 1954), in order to monitor "the activities of the Atomic Energy Commission and of problems relating to the development, use, and control of atomic energy." *Id.* § 15(b).

^{16.} One recent study prepared for the U.S. Department of Energy concluded that "[t]he subsidies afforded by Price-Anderson Act liability indemnification are potentially substantial, although highly uncertain. Through 2005, P-A subsidies are estimated to be at least as valuable as AEC's cumulative R&D budget for civilian power reactors for the period 1954–1972." CHRISTOPHER W. GILLESPIE ET AL., ENERGETICS INC., INNOVATION PATHWAY STUDY: U.S. COMMERCIAL NUCLEAR POWER 2 (2016), https://www.energy.gov/sites/prod/files/2017/01/f34/Innovation%20Pathway%20Study--U.S.%20Commercial%20Nuclear%20Power.pdf (prepared for the Office of Energy Policy Sys. & Analysis, U.S. Dep't of Energy); accord id. at 24–25 (discussing the Price-Anderson Act's subsidies).

will turn on how Congress chooses to resolve those challenges.¹⁷ This Article will return to some of these policy questions in the conclusion.

In the meantime, however, the primary focus of this Article is not so much on the policy rationales and justifications for the Act, but rather on the unusual procedures that the Act adopts in order to manage and accomplish its limitations on liability and its control of litigation that might arise out of a nuclear accident. No one procedural innovation is by itself entirely unprecedented, but the Price-Anderson Act is unique in the degree to which these unusual procedures are collected in one substantive statute. Thus, as discussed further in Part I below: 18

- The Act imposes a cap on total damages payable by nuclear plant operators for injuries arising from nuclear incidents.
- The government's administrative decision about what counts as a sufficiently severe disaster may not be reviewed under the Administrative Procedure Act.
- The existence of the statute and associated legislation preempts most state health and safety laws relating to nuclear power.
- Under the current statute, every cause of action filed in connection
 with a nuclear incident—even those filed under state law and lacking
 either diversity or clear federal question jurisdiction—is deemed a
 federal cause of action and subject to removal to (or initial filing in)
 federal court.
- All actions arising out of a given incident are consolidated in one federal district court, and managed through a caseload management panel.
- If the damages connected with a nuclear incident exceed the liability cap, Congress has promised, in § 2210(e)(2), to "take whatever action is determined to be necessary . . . to provide full and prompt compensation to the public for all public liability claims resulting from a disaster of such magnitude."
- The statute establishes unique senate procedures intended to quickly bring legislation offering such relief to a vote in the Senate.

Collectively, these procedures create a truly unusual administrative, civil, and congressional process that is quite different from how one might manage causes of action that would be filed in "normal" tort circumstances. It does not use class actions, nor does it take advantage of consolidation by the Panel on Multidistrict Litigation, which is the federal judicial system's current go-to process for managing widespread multidistrict tort litigation. While there is obviously very little that would be "normal" about a Fukushima- or Chernobylmagnitude nuclear incident in the United States, the unusual limits and

^{17.} The provisions of the current Act extend through December 31, 2025. See Price-Anderson Amendments Act of 2005, Pub. L. No. 109-58, § 602, 119 Stat. 594, 779 (codified as amended at 42 U.S.C. § 2011).

^{18.} Details of, and citations to, each of these provisions are found infra Part I.

procedures established by the Price-Anderson Act should give one pause. As discussed in Part II below, many of these procedures have been tested either directly (in federal cases associated with small-scale nuclear incidents or other challenges to the Act) or indirectly (though challenges to similar procedural innovations in other statutes). Thus far, each has survived. This individualized attention to (or mere application of) particular procedural innovations has offered little opportunity for a wide-ranging review of the Act's provisions. Taken as a whole, the Act's unusual procedural innovations have not been examined with great care.

They should be. In many ways, the Act is the antithesis of the principle of trans-substantivity in procedure—the idea that procedures should be essentially identical regardless of the subject matter at issue in a particular case. ¹⁹ While unusual circumstances may well justify unusual procedures, there is a reasonable case to be made, rooted in principles of trans-substantivity, that it is in such unusual circumstances that a "normal" approach to procedure—or at least an approach that approximates a normal process as much as possible—is most important to maintain.

In exploring the procedural implications of the Act, this Article proceeds in three Parts. Part I examines the history and current outline of procedures associated with the Price-Anderson Act. Part II looks at the procedural innovations of the Act hinted at in Part I, and examines how courts have evaluate—and may yet, in the future evaluate—the non-standard approaches set forth in the Act. In Part III, I return to the issue of trans-substantivity, and briefly explore how the principle influences judicial and legal analysis of the procedural and policy innovations embedded within the Price-Anderson Act.

Before proceeding with the main portion of the Article, however, it may be useful to briefly address the uncertainty associated with determining the risks posed by civilian nuclear power. After all, many of the procedural courses identified in the Act are likely to be of particular importance only in the event of a significant nuclear disaster;²⁰ having a sense of where the current debates lie regarding the risk of such a disaster will help evaluate the significance of the procedural innovations in the Act.

^{19.} Many commentators have remarked on the importance of this principle to civil procedure, though usually in the context of judicially-developed and interpreted procedural rules. See, e.g., Paul D. Carrington, Making Rules to Dispose of Manifestly Unfounded Assertions: An Exorcism of the Bogy of Non-Trans-Substantive Rules of Civil Procedure, 137 U.Pa. L. Rev. 2067 (1989); Geoffrey C. Hazard, Jr., Discovery Vices and Trans-Substantive Virtues in the Federal Rules of Civil Procedure, 137 U.Pa. L. Rev. 2237, 2244–47 (1989); Carl Tobias, The Transformation of Trans-Substantivity, 49 WASH. & Lee L. Rev. 1501 (1992); Mark C. Weber, The Federal Civil Rules Amendments of 1993 and Complex Litigation: A Comment on Transsubstantivity and Special Rules for Large and Small Federal Cases, 14 Rev. LTTIG. 113 (1994). As David Marcus has noted, principles of "trans-substantivity can protect process law against distortion otherwise produced by outsized political influence, capture, or bias." David Marcus, Trans-Substantivity and the Processes of American Law, 2013 BYU L. Rev. 1191, 1220–21.

^{20.} See, e.g., S. REP. No. 94-454, at 1 (1975) ("The Act... assur[es] the availability of funds for the payment of claims and by protecting the nuclear industry against unlimited liability in the unlikely of a catastrophic nuclear accident.").

Two primary considerations are relevant to evaluating the dangers posed by nuclear accidents: (1) the probability of a serious release of nuclear material from a power plant, and (2) the costs associated with such a release. Both aspects of this risk analysis have been subject to debate and the source of great uncertainty since the beginning of the Nuclear Era.

From the beginning, federal regulators and policy observers from a variety of fields have worked to accurately predict the probability of a significant nuclear accident.²¹ Many of those official calculations conclude that the likelihood of even a worst-case scenario is quite low. For instance, according to plant operators who submit probabilistic risk analyses of catastrophic releases at their plants, the maximum likelihood of those worst-case scenarios are generally in the area of one accident per 5000 plant-years.²² Other commentators are less sanguine, and argue that the risk of a Fukushima-level event is much greater than projected in government studies. For example, a 2016 review of nuclear power accidents concluded that despite post-Fukushima safety reforms, "we project at least one Fukushima-scale [] [] (or larger) accident with 50% probability every 60–150 years;"²³ another study concluded that an accident of Three-Mile-Island severity or greater (INES Level 5+) is likely to occur once every ten years or so.²⁴

Even if the likelihood of an event were easy to predict, it is hard to calculate the likely costs of a significant nuclear power plant accident. There is significant debate in the literature about the precise cost of even historical nuclear accidents, and correspondingly larger uncertainty about the costs that might be associated with a similar disaster in the United States. For instance, some commentators argue that the ultimate cost of Fukushima will be less than \$100 billion, with much of those costs—such as those that will compensate evacuated local residents—having been largely unnecessary in light of a careful scientific analysis of the actual threats posed by radiation near the facility.²⁵

^{21.} See, e.g., MAZUZAN, supra note 13, at 199–208 (discussing development of the WASH-740 Report, an early risk assessment effort that preceded enactment of the Price-Anderson Act).

^{22.} See, e.g., 2 U.S. NUCLEAR REGULATORY COMM'N, PERSPECTIVES GAINED FROM THE INDIVIDUAL PLANT EXAMINATION OF EXTERNAL EVENTS (IPEEE) PROGRAM (NUREG-1742) 2-5 (2002), https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1742/vol2/ (listing estimates of the frequency of "Core Damage" from seismic events [that is, events causing damages to the reactor core—and a likely release of radioactive material] to be, at worst, 1.5E-4, or once every 6600 years); 1 U.S. NUCLEAR REGULATORY COMM'N, SEVERE ACCIDENT RISKS: AN ASSESSMENT FOR FIVE U.S. NUCLEAR POWER PLANTS (NUREG-1150) 7-4 (1990), https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1150/ (summarizing maximum likely core damage frequency at the Zion plant in Utah to be 8.4E-4, or once every 1190 years). But see DAVID LOCHBAUM, UNION OF CONCERNED SCIENTISTS, NUCLEAR PLANT RISK STUDIES: FAILING THE GRADE (2000), https://www.ucsusa.org/sites/default/files/legacy/assets/documents/nuclear_power/nuc_risk.pdf (criticizing accuracy of these plant-specific assessments of risk).

^{23.} Spencer Wheatley et al., Reassessing the Safety of Nuclear Power, 15 ENERGY RES. & Soc. Sci. 96, 99 (2016).

^{24.} Jan Christian Kaiser, Empirical Risk Analysis of Severe Reactor Accidents in Nuclear Power Plants After Fukushima, 2012 Sci. & Tech. Nuclear Installations 1, 4.

^{25.} See, e.g., James Conca, After Five Years, What Is the Cost of Fukushima?, FORBES (Mar. 10, 2016, 6:00 AM), http://www.forbes.com/sites/jamesconca/2016/03/10/after-five-years-what-is-the-cost-of-fukushima

Many others believe the true costs are much greater. I note above some overall estimates that place the damages from a Fukushima- or Chernobyl-type event well into the hundreds of billions of dollars. 26 The International Atomic Energy Agency estimates costs for in-plant containment and cleanup at Fukushima to have totaled well over \$20 billion thus far, with substantial and serious problems remaining with respect to cleanup and decommissioning of the facility that will further add to that cost. The cost of cleanup and decontamination outside the facility's boundaries has been estimated at nearly \$17 billion for the first half-decade after the initial disaster,²⁷ while compensation costs to those evacuated and otherwise affected by the disaster will likely total around \$60 billion.²⁸ The latter two costs seem a reasonably conservative estimate of Fukushima's off-site costs, and by themselves suggest that a significant disaster is likely to generate liability at least five times greater than the Price-Anderson Act's current \$13.8 billion liability limit.²⁹ If the costs are closer to \$500 billion, the Act's limit could be expected to require utilities to pay out less than three cents for every dollar in damages from such an incident.³⁰

[hereinafter Conca, *After Five Years*]. Conca argues that much of the \$60 billion in reparations could have been avoided if the vast majority of the evacuated residents had been returned to their homes, as they could have been with (in his view) no real risk, within a few months of the initial accident. As he notes in another article,

[c]ontrary to all the hype and fear, Fukushima is basically a large Superfund site. No one will die from Fukushima radiation, there will be no increased cancer rates, the food supply is not contaminated, the ocean nearby is not contaminated, most of the people can move back into their homes, and most of the other nuclear plants in Japan can start up just fine.

James Conca, *The Fukushima Disaster Wasn't Disastrous Because of the Radiation*, FORBES (Mar. 16, 2015, 6:00 AM), http://www.forbes.com/sites/jamesconca/2015/03/16/the-fukushima-disaster-wasnt-very-disastrous [hereinafter Conca, *The Fukushima Disaster*]. Conca also notes that the Japanese economy is incurring something like \$250 billion in costs associated with its decision to shut down all of its nuclear plants for safety reviews; the first of these plants have just reopened. From his perspective, this overly cautious approach was unnecessary for all but a small number of plants located within tsunami inundation zones. Conca, *After Five Years*, *supra*. Notably, however, even Conca concedes that the *direct* cleanup costs at the facility will be at least \$15 billion over the next twenty years. *Id. But see* Mari Yamaguchi, *Japan's Fukushima Cleanup 3 Years On: Little Key Work Done*, CBC News (Nov. 12, 2014, 10:00 AM), http://www.cbc.ca/news/world/japan-s-fukushima-cleanup-3-years-on-little-key-work-done-1.2832270 (citing estimates of \$18 billion to cure the water contamination problem that is currently one of the most troubling issues at Fukushima). As costs incurred onsite, however, these costs would *not* be encompassed within the scope of the Price-Anderson Act's liability limitation. *See* 42 U.S.C. \$ 2014(w)(iii) (2012).

- 26. See supra notes 4-6.
- 27. See Julie Makinen, After 4 Years, Fukushima Nuclear Cleanup Remains Daunting, Vast, L.A. TIMES, (Mar. 11, 2015, 11:20 A.M.), http://www.latimes.com/world/asia/la-fg-fukushima-nuclear-cleanup-20150311-story.html (noting that costs for off-site decontamination totaled \$13.5 billion in first four years, with an additional \$3.48 billion allocated for the 2015–16 fiscal year).
 - 28. See Conca, After Five Years, supra note 25 (estimating over "60 billion in refugee compensation").
 - 29. See sources cited supra note 8.
- 30. As one post-Fukushima study put it, many of the true costs associated with a significant accident are likely to arise out of the "socio-economic and political" disruptions that would accompany such an event. FORGING A NEW NUCLEAR SAFETY CONTRACT, *supra* note 6, at 4 ("[T]he major consequences of severe accidents at nuclear plants have been socio-political and economic disruptions inflicting enormous cost to society. In other words, even when there are no discernible radiological public health effects from a nuclear power accident, the observed and potential disruption of the socio-economic fabric of society from a large release of radioactivity is not an acceptable outcome."). It is, therefore, possible that some of the most significant costs

In the end, there is little to be gained from expending too much effort determining how much in the way of cleanup costs might result from a nuclear accident, should one occur. Such a debate is bound to present inherent and possibly unresolvable disputes regarding risk and the degree to which such costs should be allocated to the nuclear industry. That said, even though there is substantial uncertainty associated with precise determinations of probability and cost of significant nuclear accidents, it is reasonable to assume that significant nuclear power accidents are likely to occur in the United States in the future, and that those accidents will impose on the public very large costs that will likely to outstrip the cap on liability that exists under the current version of the Price-Anderson Act.³¹ The remainder of this Article focuses on the legal processes that the United States has put into place to protect the nuclear power industry from the legal consequences that would certainly result from any such event.

I. THE PRICE-ANDERSON ACT: HISTORY AND TERMS

A. HISTORY

The Price-Anderson Act was enacted in 1957 at the dawn of the civilian nuclear power industry. The Atomic Energy Act of 1954 established the basic structure and limits to be placed on the civilian use of nuclear power,³² but proponents of that energy source argued that the civilian industry could not develop in the absence of further protection from the risks of a nuclear accident.³³ The problem was that the private insurers who would generally act to help the industry protect itself from risk were unwilling to provide more than a relatively small amount of insurance—around \$60 million—given the significant unknowns and potentially catastrophic losses that might flow from a

from such a disaster would not be truly "necessary" for public health in a scientific sense. That said, there is little to no doubt that courts would assign the costs for even precautionary activities to the category of "public liability" that would be covered under Price-Anderson procedures. Under the Act, "public liability" includes "any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or a precautionary evacuation)." 42 U.S.C. § 2014(w) (2012).

- 31. There are currently a number of nuclear power technologies being investigated that purport to have significantly lower risks of failure than existing facilities. *See, e.g.*, James A. Lake et al., *Next Generation Nuclear Power*, SCI. AM. (Jan. 26, 2009), https://www.scientificamerican.com/article/next-generation-nuclear/. This may be true, but such technologies have not yet been widely adopted, let alone permitted for construction. Furthermore, as long as the Price-Anderson Act protects nuclear plant operators from the worst consequences of operating out-of-date facilities, incentives to replace older (and riskier) facilities are limited.
- 32. Atomic Energy Act of 1954, Pub. L. No. 83-703, 68 Stat. 919 (codified as amended at 42 U.S.C. §§ 2011–2296). The Act established the Atomic Energy Commission (AEC) to serve as the administrative agency responsible for nuclear weapons and nuclear power. The civilian responsibilities of the AEC were later transferred to the Nuclear Regulatory Commission (NRC). See Energy Reorganization Act of 1974, Pub. L. No. 93-438, § 2(a), 88 Stat. 1233 (codified as amended at 42 U.S.C. § 5801(c)).
- 33. See generally MAZUZAN, supra note 13, at 93–105 (discussing limited private insurance availability, fear of substantial loss in the event of a major incident, and subsequent concern); see also id. at 105 (finding that in the absence of a solution, fear amounted to a "serious threat" to the development of a civilian nuclear power industry).

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nuclear disaster.³⁴ It soon became clear that utilities would not risk their assets on a nuclear plant that could bankrupt the company in the event of a major accident.

The solution was the Price-Anderson Act, which proposed to limit the liability particular plant operators might face for damages arising out of a nuclear incident; the understanding was that this limit would be set to match the amount of private insurance that the operators could procure on the open market.³⁵ In addition, the government agreed that it should bear part of the costs of protecting the general public by covering the difference between an operator's liability and an absolute cap on public liability damages.³⁶ The question, however, was where that cap should be set.

Early in the Atomic Era, scientific investigations and estimates of damage tended to be compilations of individual studies on the production of fission products, the lethality of radiation exposure, and other topics. There was little in the way of comprehensive study of the risks posed by a significant nuclear disaster; as one Atomic Energy Commission (AEC) staffer put it in in 1956, "[t]here seems to be an appalling lack of scientific analysis of the scope of the damage which might be caused by a runaway reactor."³⁷ This didn't stop the staff director of the Joint Committee on Atomic Energy, James Ramey, who, in the drafting of the initial versions of the Price-Anderson Act, collaborated with Senator Anderson and, "with politics in mind and no hard evidence," set the \$500 million limit as the "halfway point between zero and a billion dollars."³⁸

A later study added support to this estimate. In 1956, H. M. Parker and J. W. Healy of Hanford presented a paper to a United Nations conference that was later modified for presentation to the Joint Committee on Atomic Energy. In the paper, Parker and Healy estimated the damages from a full release of fission products from a 1000MWt reactor to range from \$56 to \$220 million and lead to the early death of 200 to 5000 persons.³⁹ By scaling this estimate up to match the somewhat larger commercial reactors anticipated by the committee, the maximum damage expected from such an incident in the United States would be

^{34.} Id. at 95-101 (discussing initial insurance estimates of \$60 to 65 million).

^{35. 42} U.S.C. § 2210(b)(1).

^{36. 42} U.S.C. § 2210(b)(2)(B).

^{37.} PANEL ON THE IMPACT OF THE PEACEFUL USES OF ATOMIC ENERGY, 84TH CONG., REP. ON PEACEFUL USES OF ENERGY TO THE J. COMM. ON ATOMIC ENERGY, vol. 2, at 607 (Comm. Print 1956); see also Governmental Indemnity for Private Licensees and AEC Contractors Against Reactor Hazards: Hearings Before the J. Comm. on Atomic Energy, 84th Cong. 51–57 (1956) (one expert testified that "[p]ractical experience with reactor failure has been minimal. Hence estimates of the consequences must rely on theoretical considerations") [hereinafter Hearings Before the JCAE].

^{38.} MAZUZAN. supra note 13. at 108.

^{39.} International Conference on the Peaceful Uses of Atomic Energy, Environmental Effects of a Major Reactor Disaster, 106–09, U.N. Doc. A/CONF.8/13 (1956). AEC Commissioner and Nobel Prize winner-to-be (Chemistry, 1961), W. F. Libby, testified before the Joint Committee in 1956 by essentially reading Parker and Healy's U.N. paper, although with the figures adjusted to fit the reactor size being considered and with the elimination of more technical sections and rounding of damages to the nearest \$50 million. Hearings Before the JCAE, supra note 37, at 51–54.

around \$500 million. This estimate was to some degree undermined by an AEC study that came the following year, however. WASH-740, a study commissioned by the AEC from Brookhaven National Laboratory and published in 1957, noted that the upper limit for property damages from a 10⁻⁵ to 10⁻⁹ probability fifty-percent release of fission products from a reactor might range from as high as \$7 billion to as low as \$500,000.⁴⁰ Despite that high estimate, the proposed legislative cap on damages did not change, remaining at the \$500 million initially settled upon and supported by the Healy and Parker study. As Anderson later conceded, the limit was not particularly scientific; rather, "I was trying to see if we could not get some figure which would not frighten the country or the Congress to death and still solve the problem which the producers of parts face."

The Price-Anderson Act passed in 1957. The original act placed a ten-year limit on the Act's provisions, 42 but the critical provisions of the Act—the limits on individual operator liability, as well as the overall cap on public liability damages—have been renewed several times, with the latest renewal, in 2005, extending the terms of the Act to 2025. 43

The Act has not merely been extended in duration, however. Over the years, the total limit on liability has crept up—by 1988, it finally reached the \$7 billion limit that was the high estimate of losses under the WASH-740 study. 44 (Although by that time, the Chernobyl disaster and the scare at Three Mile Island strongly suggested that the \$7 billion limit was an underestimate.) More important for the present purposes, however, the underlying indemnification scheme changed. In the 1975 amendments, the government withdrew from directly indemnifying public liability within the overall limit. Instead, Congress created an industry-wide "secondary insurance" pool, under which each operator of a nuclear power plant is obligated to have available, and, if necessary in the event of a nuclear incident with significant costs, to contribute a set "deferred

^{40.} U.S. ATOMIC ENERGY COMM'N, THEORETICAL POSSIBILITIES AND CONSEQUENCES OF MAJOR ACCIDENTS IN LARGE NUCLEAR POWER PLANTS: A STUDY OF POSSIBLE CONSEQUENCES IF CERTAIN ASSUMED ACCIDENTS, THEORETICALLY POSSIBLE BUT HIGHLY IMPROBABLE, WERE TO OCCUR IN LARGE NUCLEAR POWER PLANTS (WASH-740) 14 (1957) (the title itself is indicative of the way that the AEC communicated with the public about major accidents).

^{41.} Hearings Before the JCAE, supra note 37, at 123.

^{42.} Price-Anderson Nuclear Liability Act of 1957, Pub. L. No. 85-256, § 4(d), 71 Stat. 576, 556–58 (codified as amended at scattered sections of 42 U.S.C.) (setting initial time limit for indemnification agreements to 1967).

^{43.} The Act has been amended and extended on four significant occasions. *See* Pub. L. No. 109-58, §§ 601–09, 119 Stat. 594, 779–81 (2005); Pub. L. No. 100-408, 102 Statute. 1066 (1988); Pub. L. No. 97-147, 96 Stat. 4 (1982); Pub. L. No. 89-210, 79 Stat. 855 (1965). For the most recent extension, see Price-Anderson Amendments Act of 2005, Pub. L. No. 109-58, § 602, 119 Stat. 594, 779 (codified as amended at 42 U.S.C. § 2011) (extending liability indemnification provisions of the Act to 2025).

^{44.} Arnold W. Reitze, Jr. & Deborah J. Rowe, *The Price-Anderson Act—Limited Liability for the Nuclear Industry*, 17 ENVTL. L. REP. 10185, 10194 (1987) (describing provisions of HR 1414, which was enacted into law via the 1988 amendments).

premium" amount to help pay for those damages. ⁴⁵ This limitation remains the most significant financial protection offered by the Price-Anderson Act. ⁴⁶

B. FINANCIAL OBLIGATIONS UNDER THE ACT

As currently enacted, then, section 2210(b) of the Price-Anderson Act requires nuclear plant licensees to procure private insurance for their facilities at a level set by the Nuclear Regulatory Commission (NRC).⁴⁷ This level is defined, for most commercial nuclear power plants, to be "the amount of liability insurance available from private sources," defined as "the maximum amount available at reasonable cost and on reasonable terms from private sources." In 2015, the NRC set this amount at \$375 million per facility; subsequent amendments have increased the amount to \$450 million.

In addition to this primary insurance coverage requirement, all licensed facilities are required to maintain "private liability insurance available under an industry retrospective rating plan providing for premium charges deferred in whole or major part until public liability from a nuclear incident exceeds or appears likely to exceed the level of the primary financial protection required of the licensee involved in the nuclear incident."⁵⁰ This secondary insurance limit is lower than the primary limit (in 2015, this secondary limit was set at \$121,255,000 per licensed facility)⁵¹, but this deferred premium is only payable if the total damages for a given incident exceed the primary insurance coverage of the relevant facility.⁵² Once damages exceed that value, the retrospective

^{45.} Compare Price-Anderson Nuclear Liability Act of 1957 § 4(d) (establishing provision in section 170(c) of the Atomic Energy Act requiring indemnification by Atomic Energy Commission of \$500 million per event), with Act of Dec. 31, 1975, Pub. L. No. 94-197, §§ 2–3, 89 Stat. 1111, 1111–12 (codified as amended at scattered sections of 42 U.S.C.) (amending the Atomic Energy Act of 1954 by replacing government indemnification agreements with individual facility obligations to maintain financial protection, and limiting liability to total amount available from all private sources).

^{46.} See 42 U.S.C. §§ 2210(b), (e) (2012) (limiting liability from a nuclear event to the total amount of insurance required for all licensed facilities). The maximum individual insurance required of individual facilities is currently set by the AEC at \$121,255,000 per facility. See 10 C.F.R. § 140.11(a)(4) (2018).

^{47. 42} U.S.C. § 2210(b). By statute, "the amount of primary financial protection required [for large civilian power facilities] shall be the maximum amount available at reasonable cost and on reasonable terms from private sources (excluding the amount of private liability insurance available under the industry retrospective rating plan required in this subsection)." *Id.* § 2210(b)(1). The NRC is therefore not itself driving the availability of nuclear plant liability insurance; rather, the value is effectively a report by the NRC about the scope of liability that nuclear insurers are willing to insure against. The problem, of course, is that the limits under the Price-Anderson Act likely feed back into the question of how much risk private insurers are willing and able to provide, rather than representing the cost (and amount) of liability insurance available in a free market.

^{48.} *Id*.

^{49. 10} C.F.R. § 140.11(a)(4) (2015); see also 10 C.F.R. § 140.11(a)(4)(2018).

^{50. 42} U.S.C. § 2210(b)(1).

^{51. 10} C.F.R. § 140.11(a)(4).

^{52.} See 42 U.S.C. § 2210. The NRC must "establish such requirements as are necessary to assure availability of funds to meet any assessment of deferred premiums within a reasonable time when due." Id. § 2210(b)(3). These requirements are part of the financial protection requirements for licensing commercial nuclear power facilities.

premiums kick in, and require all the licensed facilities in the country to make *pro rata* contributions to cover the relevant damages.

C. LIABILITY LIMITS AND WAIVER OF DEFENSES UNDER THE ACT

Given these financial structures, there are currently three limits of relevance to the recovery of public liability damages for a nuclear incident. First, the primary insurance policy limit places a cap (\$450 million in 2018) on the amount a given operator may be charged for damages in connection with a given nuclear incident. Second, the deferred premiums are to be paid equally among all operational facilities for damages above the individual operator liability. Finally, there is both an aggregate total and yearly limit to the amount of damages that can be demanded from licensed operators through deferred premiums; in 2015, "the maximum amount of the standard deferred premium that may be charged a licensee following any nuclear incident" cannot be more than the maximum \$121.225 million secondary coverage limit, and that amount cannot be required at a rate of more than \$18.963 million per year.

To ensure that there is no question about the aggregate liability limit, 42 U.S.C. § 2210(e) reemphasizes that the "aggregate public liability for a single nuclear incident . . . shall not exceed . . . the maximum amount of financial protection required of such facilities under subsection (b)."56 Thus, the total sum of damages that could be claimed from nuclear plant operators as the result of a nuclear event occurring in 2015 would be the number of operational licensed facilities (currently 104) times the \$121.225 million deferred premium requirement, or approximately \$12.6 billion. This amount would be the maximum that could be recovered in order to pay for all public liability, which is defined as "any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation (including all reasonable additional costs incurred by a State, or a political subdivision of a State, in the course of responding to a nuclear incident or a precautionary evacuation)."57 Notably, while the 1988 amendments to the Act limited punitive damages against the Department of Energy (DOE) contractors, ⁵⁸ they did not limit the ability of courts to impose punitive damages against nuclear plant operators.⁵⁹

^{53. 10} C.F.R. § 140.11(a)(4).

^{54. 42} U.S.C. § 2210(b)(1) ("The amount which may be charged a licensee following any nuclear incident shall not exceed the licensee's pro rata share of the aggregate public liability claims and costs . . . arising out of the nuclear incident.").

^{55.} Id.; 10 C.F.R. § 140.11(a)(4).

^{56. 42} U.S.C. § 2210(e)(1)(A).

^{57.} Id. § 2014(w).

^{58.} *Id.* § 2210(s) ("Limitation on punitive damages: No court may award punitive damages in any action with respect to a nuclear incident or precautionary evacuation against a person on behalf of whom the United States is obligated to make payments under an agreement of indemnification covering such incident or evacuation."); *see also* Cook v. Rockwell Int'l Corp., 755 F. Supp. 1468, 1480 (D. Colo. 1991).

^{59.} See In re TMI, 67 F.3d 1119, 1124–25 (3d Cir. 1995) (finding that because Congress declined to completely preclude punitive damages in every case arising out of a nuclear incident, punitive damages could still be awarded). Such damages are nevertheless covered by the Act's liability limit, as they are "legal liability

The \$12.6 billion limit is subject to adjustment for inflation, but such minor adjustments are unlikely to approach the magnitude of damages that would likely be claimed under any significant nuclear event occurring on U.S. soil. There is one small consolation: The Act permits the NRC to require insured operators to waive defenses and to be liable on a strict liability theory in the event of "extraordinary nuclear occurrence[s]." This provision would expedite the distribution of the pool of funds available within the liability cap, although it would do so only for nuclear incidents that the Nuclear Regulatory Commission deems to be "extraordinary nuclear occurrences." As defined, that term encompasses:

any event causing a discharge or dispersal of source, special nuclear, or byproduct material from its intended place of confinement in amounts offsite, or causing radiation levels offsite, which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines to be substantial, and which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines has resulted or will probably result in substantial damages to persons offsite or property offsite. 61

With respect to identifying which events count as "extraordinary nuclear occurrences," the statute provides that "[a]ny determination by the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, that such an event has, or has not, occurred shall be final and conclusive, and no other official or any court shall have power or jurisdiction to review any such determination."⁶² As discussed further below, in Subpart I.D, this provision appears to altogether bar judicial review under the federal Administrative Procedure Act of any "extraordinary occurrence" designation by the NRC.⁶³

D. FEDERAL MANAGEMENT OF LITIGATION

Under the original version of the Price-Anderson Act, Congress proudly referenced the Act's protection of state law tort claims as a basis for liability. Congress insisted, for instance, that the Act was intended to ensure "that if a member of the public ever is injured by a nuclear incident, he will not be subjected to a series of substantive and procedural hurdles which would prevent

arising out of . . . a nuclear incident." *Id.* at 1123 (quoting 42 U.S.C. § 2014(w) (emphasis omitted)) (noting that under the Act, punitive damages would be borne equally by all operators through the insurance pool).

^{60. 42} U.S.C. § 2210(n); 10 C.F.R. § 140.91 (Waiver of Defenses Endorsement). The plaintiffs in the *Duke Power* case, discussed below *infra* Subpart II.A., argued that this provision was "an idle gesture since those involved in the development of nuclear energy would likely be held strictly liable under common-law principles" anyway. Duke Power Co. v. Carolina Envtl. Study Grp., Inc., 438 U.S. 59, 90 (1978).

^{61. 42} U.S.C. § 2014(j); see also 10 C.F.R. §§ 140.81–85 (setting criteria for determining "extraordinary" occurrence, and emphasizing that the analysis is separate from that associated with "conservative" maximum levels of radioactivity for purposes of setting safety criteria under normal operations, see id. § 140.82).

^{62. 42} U.S.C. § 2014(j).

^{63.} See 5 U.S.C. § 701(a)(1) (2012) (excluding from judicial review under the APA decisions where the relevant statutes "preclude judicial review").

the speedy satisfaction of a legitimate claim."⁶⁴ By 1988, however, Congress concluded that the processes necessary to result in that "speedy satisfaction" would require far more heavy-handed federal oversight than under the pre-1988 versions of the Act.

In the 1988 Amendments, Congress took steps to permit the creation of what would amount to a federal mass tort case management system for the resolution of claims arising out of a nuclear incident.⁶⁵ Under 42 U.S.C. § 2210(n)(2), there is one venue for all cases "arising out of or resulting from a nuclear incident:" the district court "in the district where the nuclear incident takes place." Upon motion by the "defendant or the Commission or the Secretary [of Energy]," any such case, whether pending in state or other federal district courts "shall be removed or transferred" to the relevant district court. Once there, the chief judge of the district court is permitted to appoint a "special caseload management panel" that is able to implement measures "consistent with existing law and the Federal Rules of Civil Procedure, as will encourage the equitable, prompt, and efficient resolution of cases arising out of the nuclear incident."

The process, notably, does not take advantage of existing mass aggregation processes. It does not (necessarily) impose class action processes on the cases that are assembled together, nor does it explicitly or implicitly rely on Multidistrict Litigation Panel consolidation and pretrial case management processes. ⁶⁹ The process fails to do this despite the fact that both models were available to Congress at the time of the 1988 amendments. ⁷⁰

Although the post-1988 statute does not, on its face, preempt state tort claims, it takes a highly unusual step to ensure that the "home" district court will be able to take jurisdiction over all relevant litigation under § 2210(n)(2) by creating what it calls a "public liability action." Under the statute,

The term "public liability action", as used in section 2210 of this title, means any suit asserting public liability. A public liability action shall be deemed to be an action arising under section 2210 of this title, and the substantive rules for decision in such action shall be derived from the law of the State in which the

^{64.} S. REP. No. 89-1605, at 4 (1966) (internal quotation marks omitted) (quoting S. REP. No. 89-650, at 13 (1965)).

^{65.} Price-Anderson Amendments Act of 1988, Pub. L. No. 100-408, § 11, 102 Stat. 1066 (codified as amended at scattered sections of 42 U.S.C.).

^{66. 42} U.S.C. § 2210(n)(2). The U.S. District Court for the District of Columbia is the venue for incidents that take place overseas but are nevertheless subject to the Act. *Id.*

^{67.} Id.

^{68.} *Id.* § 2210(n)(3)(A), (C)(v)–(vi). In many ways, the process for managing these cases is similar (though by no means identical) to mass tort cases over which the federal courts have jurisdiction under the statutes governing the use of the Multidistrict Litigation Panel. *See*, *e.g.*, 28 U.S.C. § 1407 (2012).

^{69.} See, e.g., DAVID F. HERR, MULTIDISTRICT LITIGATION: HANDLING CASES BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION 1–4 (1986).

^{70.} See, e.g., MANUAL FOR COMPLEX LITIGATION (SECOND) § 33.24 (1985) (noting availability of class action processes for complex litigation).

nuclear incident involved occurs, unless such law is inconsistent with the provisions of such section.⁷¹

Because the removal and transfer provisions of 42 U.S.C. § 2210(n)(2) apply to "any public liability action arising out of or resulting from a nuclear incident,"⁷² the net effect of these provisions is to effectively convert every state and federal cause of action alleging damages from a nuclear incident into a federal cause of action "arising under" the Price-Anderson Act, and therefore subject to federal subject matter jurisdiction—even when the case does not otherwise reflect either diversity of citizenship or any other obvious basis for federal question jurisdiction. While the substantive standards for liability remain the same as they were under state law, the statute simply deems the underlying cause of action to be federal, and apparently does so solely for jurisdictional purposes. The constitutional and procedural implications of this change are significant, and, as discussed further below, serve to further reinforce the substance-specific aspects of the Price-Anderson Act.

E. CLAIMS ABOVE THE LIABILITY LIMIT

In the event that the relevant district court concludes that total liability for an event may "exceed the [applicable] limit of liability," the court must specifically approve a "plan of distribution" before the court distributes any awards greater than fifteen percent of that limit.⁷³ The statute sets out several considerations that the court is supposed to use to guide the terms of the distribution plan.

As already noted, however, any significant nuclear incident is likely to quickly reach the overall aggregate limit on liability. Those who had not yet been fully compensated would be left to bear the burden of their losses on their own, unless they could persuade Congress to take steps to provide additional compensation above the cap on aggregate operator liability.

In fact, the Price-Anderson Act suggests that Congress will undertake such an effort. Section 2210(e)(2) provides that:

In the event of a nuclear incident involving damages in excess of the amount of aggregate public liability under paragraph (1), the Congress will thoroughly review the particular incident in accordance with the procedures set forth in subsection (i) and will in accordance with such procedures, take whatever action is determined to be necessary (including approval of appropriate compensation plans and appropriation of funds) to provide full and prompt compensation to the public for all public liability claims resulting from a disaster of such magnitude.⁷⁴

This political promise is backed by § 2210(i) of the statute, which sets out a detailed procedure for the development and, within Congress, the consideration of, a supplemental compensation plan intended to meet the

^{71. 42} U.S.C. § 2014(hh).

^{72. 42} U.S.C. § 2210(n)(2) (emphasis added).

^{73. 42} U.S.C. § 2210(o)(1).

^{74.} Id. § 2210(e)(2).

political obligation set out in § 2210(e)(2).⁷⁵ The statute does not clearly state whether it intends this promise to be legally enforceable; I leave consideration of that question (as well as others regarding the procedural innovations of the Price-Anderson Act) to Part II.

II. THE PRICE-ANDERSON ACT: A PROCEDURAL OUTLIER

As seen from the discussion above, the Price-Anderson Act adopts a variety of unusual procedures that raise significant questions of constitutional, administrative, and procedural law. Many of the concerns raised by the Act have been addressed by the federal courts, although others (thankfully) remain untested.

Proceduralists have coined the term "trans-substantivity" to stand for the proposition that most procedural rules in American civil practice are broadly applicable, and do not turn on the substance of a particular claim. While there is an ongoing discussion among proceduralists regarding the merits of trans-substantivity, 76 one thing is clear: The Price-Anderson Act defines an administrative and civil litigation process that is a long way from being trans-substantive. In fact, many of the most critical procedural decisions over litigation regarding damages associated with litigation associated with a nuclear accident involve procedures that are largely unique to the Act and effectively untested. As the following discussion demonstrates, the Act is anything but "trans-substantive."

These unusual processes within the Price-Anderson Act make it a useful pedagogical tool for examining several problems associated with torts, federal court procedure, and administrative law. In order to effectively cap nuclear accident liability, the statute requires significant federal interference with the normal operation of tort liability rules in the states as well as typical administrative law processes that might be used to challenge agency actions. This Part examines legal challenges and cases that have been, and that may yet be, brought to bear with respect to the procedural innovations of the Price-Anderson Act.

A. LIABILITY LIMITATION AS DUE PROCESS VIOLATION: DUKE POWER

The 1975 amendments to the Price-Anderson Act prompted litigation seeking to challenge, on Due Process and Equal Protection Grounds, the constitutional validity of the liability limits imposed by the Act. This challenge, while initially accepted by the district court, was ultimately rejected on appeal by the U.S. Supreme Court in the 1978 decision *Duke Power Co. v. Carolina Environmental Study Group, Inc.*⁷⁷ While the underlying challenge in *Duke*

^{75.} Id. § 2210(i); id. § 2210(e)(2). This subsection is set forth in detail in the Appendix.

^{76.} See, e.g., GILLESPIE ET AL., supra note 16, at 24-25.

^{77. 438} U.S. 59 (1978). The judgment of the Court was unanimous, although in separate concurring opinions, three justices argued that the real flaw in the case was that the plaintiffs' claims were not justiciable.

Power goes more to the merits of the policy judgment represented by the liability limit rather than a particular procedural innovation, the decision in *Duke Power* is an important starting point in looking at how the unique procedural innovations of the Price-Anderson Act translate into accepted legal analysis.⁷⁸

In *Duke Power*, the Court examined the plaintiffs' claims that the liability limits in the Price-Anderson Act would inherently violate their Fifth Amendment Due Process rights by depriving them of their ability to recover for losses arising out of a nuclear incident. They also alleged violations of the Equal Protection Clause. Questions of standing, ripeness, and justiciability were of course significant to the case, although the majority of justices ultimately concluded that the claims were justiciable because (a) the express purpose of the Act was to encourage the development of commercial nuclear energy, (b) the entire Act, including the total aggregate liability limits, was necessary to achieve that purpose, and (c) the Act seemed, in fact, to accomplish its purpose, resulting in commercial nuclear power plants that were allegedly polluting rivers that the plaintiffs used.⁷⁹

With respect to the due process arguments, the Court applied the "traditional presumption of constitutionality generally accorded economic regulations and that [they] be upheld absent proof of arbitrariness or irrationality on the part of Congress." After analyzing the entire set of policies encompassed by the Price-Anderson Act, the Court concluded that the guarantee of at least an initial pool for financial recovery under the Act, along with Congress' promise to provide full compensation, was sufficient to meet the minimal obligations of the Due Process Clause in light of the justifiable policy goal of promoting development of the industry. The Court argued that the liability limit was not intended to be an effective estimate of the full scope of

See id. at 94–95 (Stewart, J., concurring in the result); id. at 95–102 (Rehnquist, J., concurring in the judgment); id. at 102–03 (Stevens, J., concurring in the judgment).

^{78.} Arguably, though, a liability limit is as much substantive as procedural. The Court's decision in *Shady Grove Orthopedic Associates v. Allstate Insurance Co.*, 559 U.S. 393 (2010) (plurality opinion), arguably divided, at least in part, on the question of whether the procedural limits in that case were merely procedural, or if they were, rather, more like "substantive" caps on the recovery of statutory damages. *Compare id.* at 405 (plurality opinion) (holding that the two rules "flatly contradict each other"), *with id.* at 437 (Ginsburg, J., dissenting) (finding no conflict between the rules and arguing that federal rules should be interpreted with sensitivity to "important state regulatory policies"). To be sure, the Price-Anderson Act limits are more obviously substantive, but the line between substance and procedure in this area is imprecise.

^{79.} Duke Power, 438 U.S. at 68-81.

^{80.} Id. at 83. Plaintiffs sought an intermediate level of scrutiny

like that applied in cases such as *Craig v. Boren*, 429 U.S. 190 (1976) (equal protection challenge to statute requiring that males be older than females in order to purchase beer) or *United States Trust Co. of New York v. New Jersey*, 431 U.S. 1 (1977) (Contract Clause challenge to repeal of statutory covenant providing security for bondholders).

potential losses, but a "starting point" for further congressional consideration. ⁸² The Court put significant weight on Congress' "express" "statutory commitment" under § 2210(e)(2) to "take whatever further steps are necessary to aid the victims of a nuclear incident," ⁸³ although nothing in the opinion suggests that the Court might be willing to *require* Congress to offer such relief in the absence of legislative action. ⁸⁴

Finally, the Court rejected the plaintiffs' equal protection claims, holding that the "general rationality of the Price-Anderson Act liability limitations—particularly with reference to the important congressional purpose of encouraging private participation in the exploitation of nuclear energy—is ample justification for the difference in treatment between those injured in nuclear accidents and those whose injuries are derived from other causes." 85

The *Duke Power* decision was forty years ago and based on a statute that has seen two significant amendments in the intervening years. The Court's decision is rooted in economic and policy assumptions regarding the need for the Act's limits in order to encourage a private nuclear industry, but Congress has not squarely addressed those assumptions in the intervening years. In those years, however, the U.S. civilian nuclear industry has continued at a steady state (with few additional plants coming online since the late 1980s), while the nuclear industry has experienced three significant nuclear power accidents at Three Mile Island (TMI), Chernobyl, and Fukushima. In light of those decades of data on the state of the nuclear industry, as well as the new procedures in the 1988 amendments discussed above in the Introduction and Part I, it is not clear that the fundamental rationales behind the *Duke Power* decision still support its conclusion.

Nevertheless, at the time of the decision, *Duke Power* was a largely unremarkable application of standard due process principles. In upholding the statute, however, it relied on a number of the Act's interlocking procedural innovations that, collectively, could have led the Court to a more skeptical examination of the Act. That conclusion is particularly true after the additional innovations embedded in the 1988 amendments.

B. PREEMPTION

The Atomic Energy Act, in which the Price-Anderson Act is embedded, preempts state statutes and regulations that might impose additional safety procedures on the operation of nuclear facilities or that might expand liability

^{82.} See id. at 85–87 ("[T]he \$560 million figure [currently applicable] was not arrived at on the supposition that it alone would necessarily be sufficient to guarantee full compensation in the event of a nuclear incident. Instead, it was conceived of as a 'starting point' or a working hypothesis.").

^{83.} *Id.* at 86 n.31; *see also id.* at 93 ("[T]he Act contains an explicit congressional commitment to take further action to aid victims of a nuclear accident in the event that the \$560 million ceiling on liability is exceeded.").

^{84.} See infra Subpart II.E.

^{85.} Duke Power, 438 U.S. at 93-94.

limits for operators of nuclear facilities. ⁸⁶ As the Act was initially conceived, however, preemption did not extend to prevent state tort causes of action for recovery of damages due to a nuclear incident. Such tort actions were an inherent part of the Price-Anderson Act process. As one NRC commissioner noted in comments post-dating the decision in *Duke Power*, one of the basic principles of the liability scheme under the original Act was that "[s]tate tort law, to the greatest extent possible, be unhindered in its application to nuclear incidents." ⁸⁷ By the time Congress revised the Price-Anderson Act in 1988, however, this principle lost out, at least in part, to the realities of mass tort litigation as revealed by the events following Three Mile Island ⁸⁸ (not to mention the much more terrifying example at Chernobyl).

In the 1988 Act, then, Congress explicitly provided that *all* causes of action seeking "public liability damages" would not merely be covered by the liability limits of the statute, but that they were themselves "public liability actions" deemed to "aris[e] under section 2210 of this title." While Congress' primary goal with this definition of a "public liability action" is to lay claim to federal subject matter jurisdiction over all related cases (on which I have more to say in Subpart II.C., *infra*), and while the statute does provide that the underlying rules of decision remain rooted in state law, of the federally-oriented definition of "public liability action"—and the subsequent transfer of all nuclear liability tort cases to a centralized federal district court—does as much to undermine the principles of trans-substantivity for nuclear liability tort actions as any other part of the statute. After the 1988 amendments, no tort liability cases can proceed under state law principles without early interference from—and wholesale removal to—the federal system.

There is at least one place that this may well make a difference. Under the relevant language of 42 U.S.C. § 2014(hh), state law principles provide relevant rules of decision as long as they are not "inconsistent with the provisions" of § 2210. As noted above, the plaintiff in *Duke Power* argued that there was at least an argument, prior to the adoption of § 2014(hh), that neutrally applied state tort principles would require the imposition of strict liability against nuclear plant operators in the event of *any* damage arising out of a nuclear incident. After the 1988 amendments, however, there is a reasonable argument to be made that the application of strict liability principles to anything other than an

^{86.} See, e.g., Cook v. Rockwell Int'l Corp., 618 F.3d 1127, 1142–44 (10th Cir. 2010); Skull Valley Band of Goshute Indians v. Nielson, 376 F.3d 1223, 1239–40 (10th Cir. 2004); McLandrich v. S. Cal. Edison Co., 942 F. Supp. 457, 464–67 (S.D. Cal. 1996).

^{87.} J. Saltzman, *U.S. Nuclear Liability Legislation: Perspectives on the Price-Anderson Act and Its Future, in* Nuclear Third Party Liability and Insurance: Status and Prospects, Proceedings from the Munich Symposium 400, 406 (1985).

^{88.} For more details on the incident, see generally President's Comm'n on the Accident at Three Mile Island, Report of the President's Commission on the Accident at Three Mile Island (1979).

^{89. 42} U.S.C. § 2014(hh) (2012).

^{90.} Id.

^{91.} Duke Power Co. v. Carolina Envtl. Study Grp., Inc., 438 U.S. 59, 90 (1978).

"extraordinary nuclear occurrence" is inconsistent with the provisions of § 2210 (which only triggers waivers of defenses once the NRC makes such a determination). Though this argument might have been available to defendants prior to the enactment of the 1988 amendments, the claim is that much stronger in light of the plain language of § 2014(hh). This likely-limit on the availability of strict liability for damages arising from something less than an "extraordinary" incident further emphasizes the degree to which the assumptions surrounding the decision in *Duke Power* have changed since the 1988 amendments to the Act.

C. "PUBLIC LIABILITY ACTIONS" AND PROTECTIVE JURISDICTION

The specialized treatment given public liability actions under the statute is primarily an effort on the part of Congress to justify the diversion of all nuclear liability cases to a particular federal court. This cannot be done without the sweeping expansion of federal subject matter jurisdiction represented by the provisions of 42 U.S.C. § 2014(hh). Consider, for instance, a state tort suit for negligence (or strict liability) arising out of a nuclear incident that is brought by a citizen of a state against a corporation organized under or headquartered in the laws of that same state. Without either federal question or diversity jurisdiction, there is no constitutionally-cognizable federal subject matter jurisdiction over the suit.

In § 2014(hh), however, Congress has "deemed" tort causes of action—even those rooted in state law—to be actions "arising under" the Price-Anderson Act itself. By calling these "federal" causes of action, Congress can claim that federal courts can take jurisdiction over these suits under its broad constitutional "arising under" jurisdiction. ⁹² In accomplishing this goal, however, Congress has gone far beyond (for instance) its assertion of jurisdiction over state class action suits under the Class Action Fairness Act. Under that Act, parties may remove to federal court state law class actions that have more than \$5 million at issue and in which there is minimal diversity between the plaintiffs and defendants. ⁹³ There, at least, the existence of at least minimal diversity makes the case consistent with the diversity language in Article III, clause 2 of the United States Constitution. ⁹⁴

Under the Price-Anderson Act, however, it is not clear why Congress can simply "deem" that a state law cause of action suddenly presents issues arising under federal law.⁹⁵ The claim remains a state law claim, with (as the definition

^{92.} This principle of broad constitutionally-based federal question jurisdiction is best represented by the Court's decision in *Osborn v. Bank of the United States*, 22 U.S. (9 Wheat.) 738, 756 (1824), in which the Court upheld federal subject matter jurisdiction over a suit brought by the Bank of the U.S. seeking to recover stolen money from an Ohio tax collector. Because federal law was an "ingredient" in the case, the Court said, jurisdiction under Article III was appropriate. *Id.* at 823.

^{93. 28} U.S.C. § 1332(d) (2012).

^{94.} U.S. CONST. art III, § 2.

^{95.} By enacting this provision, Congress effectively overruled an opinion of the U.S. Court of Appeals for the Third Circuit, issued before the 1988 amendments, holding that state law causes of action covered by the

provides) the rules of decision rooted in state substantive tort law. On the other hand, Congress has explicitly deemed it to be a cause of action "arising under" the Price-Anderson Act, even though that Act does not purport to set out any tort-based rules of decision. Perhaps Congress intended to create "federal common law" that nevertheless imports state law principles, as the Court did for the Copyright Act in the 1956 case of *De Sylva v. Ballentine*. Such an implicit shift in the "source" of the cause of action without a substantive change in the rules of decision, however, seems somewhat deceptive. In *Boyle v. United Technologies Corp.*, the Court strongly suggested that adopting "federal common law" that had as its content a state law rule of decision did not really amount to adopting federal common law at all. Ight of that conclusion, it seems doubtful that Congress could use the hand-waving "deemed to be an action" language of § 2014(hh) as the ground upon which to rest federal subject matter jurisdiction.

The statute seems to present issues reminiscent of the dispute among the Justices in *Textile Workers Union v. Lincoln Mills*, ⁹⁸ in which the Court was faced with the question of whether federal courts had proper subject matter jurisdiction over apparently state law causes of action between unions and companies cases alleging breaches of a collective bargaining agreement. The majority concluded that the Labor Management Relations Act of 1947 permitted courts to create federal common law in the area of labor-management relations, and viewed the case as within the subject matter jurisdiction of the federal courts through the federal common law nature of the cause of action. ⁹⁹

Justice Frankfurter, however, was no fan of federal common law, and he rejected the idea that the cause of action was rooted in anything other than state contract law. He therefore had to grapple with the question of whether Congress could expand the jurisdiction of the federal courts to include a dispute in which there was neither diversity nor a clear federal question. In his dissenting opinion, he carefully reviewed and rejected a theory of federal "protective jurisdiction," which would allow Congress to assign any causes of action to federal court jurisdiction as long as Congress might, in theory, be able to exercise substantive legislative control over that area of law.¹⁰⁰

In the years since *Lincoln Mills*, the Court has regularly rejected that broad "protective jurisdiction" theory of congressional power. While the Court has allowed Congress to grant federal subject matter jurisdiction over cases that do

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Price-Anderson Act did not "arise under" the Act and therefore were not within the scope of federal question jurisdiction. *See* Stibitz v. Gen. Pub. Utils. Corp., 746 F.2d 993, 996 (3d Cir. 1984), *superseded by statute*, Price-Anderson Amendments Act of 1988, Pub. L. No. 100-408, 102 Stat. 1066, *as recognized in In re* TMI Litig. Cases Consol. II, 940 F.2d 832, 835 (3d Cir. 1991).

^{96.} See, e.g., 351 U.S. 570 (1956) (creating "federal common law" for defining a child under the Copyright Act, but adopting state-specific rules of decision as the content of federal law).

^{97. 487} U.S. 500, 508 n.4 (1988).

^{98. 353} U.S. 448 (1957).

^{99.} Textile Workers Union v. Lincoln Mills, 353 U.S. 448, 450-59 (1957).

^{100.} Id. at 460-84 (Frankfurter, J., dissenting).

not fit within traditional diversity (including alienage) or federal question "arising under" jurisdiction, it has done so only when Congress is explicitly exercising its substantive powers under the Constitution, and where the jurisdictional provision is part of a broader federal regulatory and/or statutory scheme. In *Verlinden B.V. v. Central Bank of Nigeria*, for instance, the Court upheld Congress' grant (under the Foreign Sovereign Immunity Act [FSIA]) of federal court subject matter jurisdiction over any suits against a foreign sovereign—even over suits based on state law causes of action and not within the scope of the alienage jurisdiction. ¹⁰¹ This extension of federal court jurisdiction was appropriate in light of Congress' "authority over foreign commerce and foreign relations" as well as the comprehensive statutory scheme embodied in FSIA. ¹⁰²

The mere presence of substantive authority is not enough, however; in *Mesa v. California*, the Court rejected the naked "grab" of federal court jurisdiction over all suits filed against federal officers. ¹⁰³ The Court concluded that assertion of authority in that kind of situation undermined the underlying purpose of the division between the party-based diversity jurisdiction of the federal courts and the substantive "arising under" powers of the courts. ¹⁰⁴ Absent some kind of clear connection asserted between the state law litigation and a clearly articulated federal interest, the mere assertion of federal subject matter jurisdiction over federal officers was constitutionally impermissible.

The Price-Anderson Act falls somewhere between *Verlinden* and *Mesa*. On one hand, the jurisdictional language in § 2014(hh) and § 2210(n)(2) is part of a broader statutory scheme. On the other hand, the power under which Congress is operating here is rooted purely in the broad interstate commerce power and the Necessary and Proper Clause of the Constitution, not in an area like foreign relations where the nature of federal governmental interests are particularly clear. In addition, the jurisdictional grab is over litigation that is squarely within the scope of traditional state common law causes of action, and Congress is ultimately doing very little to manage substantive tort law; the Price-Anderson Act has much more to say procedurally than substantively. For Congress to insist on federal court jurisdiction over such "down the middle" state tort cases as those that might be presented after a nuclear power accident risks running afoul of the "no purely jurisdictional hand-waiving" principle that is inherent in *Mesa*.

The strongest argument for this expansion of federal jurisdiction is that it would only occur in the context of a significant mass tort, the effects of which would probably cross state lines and in the context of a highly regulated industry. In this way, there is a *Verlinden*-like "federal interest/involvement" at issue that

^{101. 461} U.S. 480, 491–97 (1983).

^{102.} Id. at 493

^{103. 489} U.S. 121, 124–39 (1989). In *Mesa*, two mail-truck drivers had separate accidents, they were arraigned in state court on criminal charges, and the federal government removed based on a statute allowing removal in cases against any "officer of the United States . . . for any act under color of such office." *Id.* at 123–24

^{104.} Id. at 129-130.

might allow federal "arising under" jurisdiction over state law damages actions falling within the scope of the Price-Anderson Act. Both the Third and the Seventh Circuits have accepted this proposition, finding the statute constitutional, and allowing Price-Anderson Act federal jurisdiction over state law damages claims connected with nuclear incidents. ¹⁰⁵

At the same time, though, the causes of action at issue in *Verlinden* are rather different than the causes of action at issue in a Price-Anderson scenario. Under *Verlinden*, if FSIA (and its federal jurisdictional rule) did not exist, the relevant state law causes of action might have been precluded altogether by comity and foreign sovereign immunity principles. With the Price-Anderson Act, however, there is nothing that would preclude this kind of state law claim from proceeding in state court in the absence of the Act. The jurisdictional expansion of the Price-Anderson Act is little more than a naked power grab by the federal statute, and it does so without fundamentally changing any of the underlying characteristics of the state law cause of action. The Third and Seventh Circuit decisions notwithstanding, there are real constitutional problems with the jurisdictional provisions of the Act. 107

For purposes of this Article, there is no need to definitively resolve whether the Act's extension of federal subject matter jurisdiction is permissible. The very fact that the issue must be addressed demonstrates that, once again, the Price-Anderson Act has incorporated an innovation that takes the statute out of the realm of trans-substantive procedure. It is the collective impact of these unusual procedural tracks that should call into question the deference that courts might otherwise give to Congress in assessing the procedural and policy-based validity of the statute.

D. Non-Reviewability of NRC Determinations Regarding "Extraordinary Nuclear Occurrences"

Civil procedure is not the only process that is subject to innovation under the Price-Anderson Act; administrative law also faces at least one similar challenge. 108

As a general matter, final decisions made by federal agencies are subject to judicial review under section 702 of the federal Administrative Procedure Act.¹⁰⁹ Generally speaking, this decision would extend to a legal determination

^{105.} See O'Conner v. Commonwealth Edison Co., 13 F.3d 1090, 1099–1100 (7th Cir. 1994); In re TMI Litig. Cases Consol. II, 940 F.2d 832, 857 (3d Cir. 1991).

^{106.} In fact, the statute explicitly requires state law principles to be relied upon in resolving this "deemed federal" cause of action. 42 U.S.C. § 2014(hh) (2012).

^{107.} The district court in the Third Circuit case concluded, on just such a theory, that the Price-Anderson Act's jurisdictional provisions were unconstitutional. *See In re* TMI Coordinated Proceedings, 735 F. Supp. 640, 643–45 (M.D. Pa. 1990), *vacated sub nom. In re* TMI Litig. Cases Consol. II, 940 F.2d 832 (3d Cir. 1991).

^{108.} Marcus, *supra* note 19, at 1196–97. In this article on trans-substantivity, Marcus puts both civil procedure and administrative law into one category: "Process Law."

^{109. 5} U.S.C. § 702 (2012).

made by the NRC that a particular nuclear incident amounts to an "extraordinary nuclear occurrence" under § 2014(j). 110

Any effort to take an agency decision out of the standard processes of judicial review faces skepticism from reviewing courts. There is a "strong presumption that Congress intends judicial review of administrative action. . . . [and] 'that judicial review of a final agency action by an aggrieved person will not be cut off unless there is persuasive reason to believe that such was the purpose of Congress." This skepticism can be overcome only with clear congressional language to the contrary.

Precluding review is, of course, precisely what 42 U.S.C. § 2014(j) does with respect to determinations that a particular nuclear incident is an "extraordinary nuclear occurrence." Under the definition,

[a]ny determination by the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, that such an event has, or has not, occurred shall be final and conclusive, and no other official or any court shall have power or jurisdiction to review any such determination.¹¹³

On this issue, then, there is no real question. An NRC decision on this point is unreviewable. While such a statutory bar on justiciability is permissible (indeed, it is explicitly permitted by 5 U.S.C. § 701(a)(1)),¹¹⁴ such a limitation reemphasizes the degree to which the Price-Anderson Act dictates something other than "normal" judicial procedures for determinations regarding compensation for nuclear liability damages.

E. THE PROMISE OF CONGRESSIONAL ACTION AND POLITICAL QUESTIONS

The Price-Anderson Act imposes a limit on aggregate liability for nuclear incidents, but leaves open a door for later congressional action by promising, in 42 U.S.C. § 2210(e)(2), that Congress will

thoroughly review the particular incident in accordance with the procedures set forth in subsection (i) and will in accordance with such procedures, take whatever action is determined to be necessary . . . to provide full and prompt compensation

^{110.} Recall that such a determination is critical to triggering the strict liability standards built into operator financial assurances under § 2210(n)(1).

^{111.} Bowen v. Mich. Acad. of Fam. Physicians, 476 U.S. 667, 670 (1986) (quoting Abbott Labs. v. Gardner, 387 U.S. 136, 140 (1967)).

^{112.} See 5 U.S.C. § 701(a)(1) (codifying the APA, which provides that judicial review is not available if "statutes preclude judicial review").

^{113. 42} U.S.C. § 2014(j)

^{114.} There is some question whether such a limit on justiciability could apply to bar consideration of constitutional questions, however. If, following a nuclear accident, a plaintiff were to bring a constitutional cause of action against a defendant (likely a governmental defendant; perhaps one that had failed to adequately regulate the facility, for instance), at least some case law strongly suggests that such constitutional claims cannot be barred from judicial review. Generally speaking, courts are even *more* skeptical about congressional bars to constitutional claims than they are regarding congressional waivers of APA-based causes of action. *See, e.g.*, Webster v. Doe, 486 U.S. 592, 601–04 (1988) (allowing constitutional claims associated with termination of CIA employee, even though claims under APA were, by statute, non-justiciable under 5 U.S.C. § 701(a)(2)); *Bowen*, 476 U.S. at 681 n.12. It's not clear that the principles in *Doe* would permit a court to review this kind of decision by the NRC, however, because the plain language in the statute is pretty sweeping.

to the public for all public liability claims resulting from a disaster of such magnitude. 115

In *Duke Power*, the Supreme Court emphasized the value of this statement, noting that in combination with the mechanism for the quick recovery of damages that fall under the aggregate cap, this commitment to "full and prompt" congressional compensation justified the (apparently temporary) limit on recovery, and undermined the validity of the plaintiffs' due process claim.¹¹⁶

Despite this reliance on the promise, however, what is notable is what the statutory provision does not do: It does not appear to provide any legal grounds upon which an injured, but uncompensated party, might be able to challenge Congress' failure to approve a plan offering full compensation to the victims of a nuclear incident. Nor does it seem likely that a federal court would consider such a claim of congressional failure in light of the well-recognized, nearplenary authority of Congress over appropriations. Even if there were clear statutory language upon which one could rest such a claim—and there is not it is nearly inconceivable that a court would order Congress to approve a compensation plan that would certainly carry a significant financial burden or serious policy implications. If Congress chooses not to act (or, rather, if Congress is unable to reach consensus on a plan of action and the accompanying financial burden), any case alleging that it should or must would almost certainly be dismissed as a political question (if not simply dismissed outright for failure to state a claim).¹¹⁷ Given Congress' plenary control over the initial appropriation of money, as well as the lack of any language in the Price-Anderson Act defining how much money might be necessary to ensure full compensation, such a case would meet both preconditions for a political question: It would seek judicial enforcement of a decision that is textually committed to Congress, while simultaneously asking the Court to set compensation in the absence of "judicially discoverable and manageable standards" for making such a determination. 118

This is not to say that the promise is entirely worthless. In the period shortly after a significant nuclear incident, Congress would face great political pressure to come to the aid of victims. With respect to legally enforceable claims, however, the Price-Anderson Act takes clearly enforceable tort causes of action out of the normal legal process, and swaps them out for a cap on liability and an apparently valuable, but actually unenforceable, "promise" of full compensation. Even if we were less cynical about congressional capabilities, such an offering seems a rather poor trade, indeed.

^{115. 42} U.S.C. § 2210(e)(2).

^{116.} Duke Power Co. v. Carolina Envtl. Study Grp., Inc., 438 U.S. 59, 90 (1978); see also 42 U.S.C. § 2210(n); id. § 2014(j); 10 C.F.R. § 140.91 (2018); id. §§ 140.81–85.

^{117.} See Baker v. Carr, 369 U.S. 186, 217 (1962).

^{118.} See Zivotofsky ex rel. Zivotofsky v. Clinton, 566 U.S. 189, 195 (2012) (quoting Nixon v. United States, 506 U.S. 224, 228 (1993)).

III. TRANS-SUBSTANTIVITY AND THE COST OF LEGISLATIVE PROCEDURAL VARIANCE

Each one of the Price-Anderson Act's substance-specific procedural innovations might well be justified in isolation. ¹¹⁹ It is in combination, though, that these procedural diversions and unusual processes should give rise to serious skepticism—and for this reason the statute is a Federal Courts professor's pedagogical dream. At the end of the day, the statute insists on imposing highly unusual processes on what are, at their heart, run-of-the-mill state law tort cases.

I recognize that by making this characterization, I am vastly understating the severity of circumstances that would trigger the most significant procedural innovations of the Price-Anderson Act. *Of course* there is nothing "run of the mill" about the mass tort situation that is bound to arise in the event of any significant nuclear disaster, and of course, thinking ahead about the legal problems that are likely to arise in the period following such an event is good planning, and should be encouraged.

Indeed, if one were to take a stand in favor of a trans-substantivity principle in legislative enactments, mass tort seems a poor place to do it. Our court system has, in recent decades, become increasingly attentive to the problems of mass justice, and many of those who criticize a "strong form" of trans-substantivity argue that procedural developments in the world of mass torts demonstrate the degree to which we need to abandon the platonic ideal of trans-substantivity so that we can implement creative solutions to very difficult problems.¹²⁰

Nevertheless, I believe that this point is worth making, even in this particular context, there is value in trans-substantivity. Legislative enactments should strive to avoid altering preexisting trans-substantive regimes, and to the degree that statutes bring about substance-specific procedural changes, courts should examine those enactments with care in order to limit the scope of procedural changes to those necessary to accomplish important legislative purposes. Particularly when a statute adopts as many substance-specific procedures as are adopted in the Price-Anderson Act, and does so despite the availability of other mechanisms that might accomplish the same or similar goals, the courts should impose a higher standard of review in systemic

^{119.} Each innovation, by itself, is not unambiguously substance-specific, in that one can find other examples where statutory enactments have used a particular innovation in a substance-specific manner in order to achieve particular policy goals. In combination, however, the Price-Anderson Act is uniquely substance-specific; I am confident that while parts of the statute have some similarity to processes in other substance-specific statutes, no other statute offers the same combination of procedural innovations as currently holds true under the Price-Anderson Act.

^{120.} See, e.g., David Marcus, The Past, Present, and Future of Trans-Substantivity in Federal Civil Procedure, 59 DEPAUL L. REV. 371, 372–73 (2010) ("The 1938 authors [of the FRCP] likely did not foresee the asbestos leviathan, class actions with up to 100 million plaintiffs, or other enormously complicated fields of litigation that beg for specialized procedural treatment. Legal practice has evolved since 1938 . . . Why should a one-size-fits-all set of procedural rules persist?" (footnote omitted)); Judith Resnik, Failing Faith: Adjudicatory Procedure in Decline, 53 U. CHI. L. REV. 494, 526–27 (1986).

challenges to the validity of the statute to ensure that the substance-specific changes are not cloaking impermissible bias or irrational policy choices. I consider each of these points in more detail below.

Of course, legislatures often impose substance-specific procedures, and I am not trying to make the argument that they should not. My point, rather, is that it is not merely courts that should be driven by principles of transsubstantivity, but that legislatures should be guided by similar principles. Although particularly strong policy rationales may justify legislative adoption of substance-specific procedures, the validity of those rationales should be tested by courts in challenges to the validity and applicability of any such non-standard procedures. There should, in short, be a presumption not only of judicial transsubstantivity, but one of legislative trans-substantivity as well.

This is an unusual perspective, even among those who adhere to the principles of trans-substantivity. David Marcus, for instance, has argued with others that trans-substantivity is an important limiting factor that should guide judicial drafters and interpreters of procedural rules. 121 At the same time, however, he is rather sanguine—even enthusiastic—about legislative authority to prescribe substance-specific rules of procedure. 122 And yet, as noted in Part II's discussion of examples from the Price-Anderson Act, procedural innovation is already subject to judicial skepticism through standards requiring legislative "plain statements" in the case of procedural innovations, as well as presumptions against such innovation.¹²³ This is, I suggest, not mere accident, but an intentional—and, indeed, appropriate—application of the principle of transsubstantivity in the realm of legislation. This approach does not bar legislative procedural innovation in appropriate circumstances; rather, it tests legislative enactments using that innovation to ensure that the legislature has carefully considered the implications of its policy choices. Through that judicial skepticism, the judicial branch also influences legislators in their own procedural choices, and ensures that decisions to adopt substance-specific statutes are made for appropriately significant policy reasons, rather than (for instance) as the result of interest group capture or erroneous factual presumptions.

A. THERE IS A UNIVERSAL VALUE IN TRANS-SUBSTANTIVITY

Trans-substantivity, as implemented, has several useful values that all arguably boil down to the utility of treating like cases alike. In such a system, all legal claims are treated with an equal level of consideration—a level of equanimity that is consistent with the legal system's goal of treating individual

^{121.} Marcus, *supra* note 120, at 375–77.

^{122.} See Marcus, supra note 19, at 1234 ("Trans-substantivity has no general justification that should limit the legislative prerogative to enact substance-specific process law.").

^{123.} In a subsequent article, I plan to explore the degree to which a judicial insistence (or, at least bias toward) trans-substantivity drives judicial presumptions in civil procedure, administrative law, and federal courts jurisprudence. This judicial tendency to prefer "legislative trans-substantivity" is, in my view, a significant factor in these fields of law.

litigants alike regardless of their individual nature or personalities. Consistent procedures also permit a certain level of generalization between areas of law. While there has, of course, been an increasing level of specialization in the legal community over the last several decades, the vast majority of our judges remain generalists, as do many attorneys (particularly the attorneys who practice outside of the largest regional and national law firms). This consistency of procedure thereby also helps lower barriers to entry, and encourages new entries into the legal profession. Skill in procedure is easily translatable, and given that we generally hope that procedural law does *not* change substantive outcomes, a substance-specific approach risks a throwback to the era of common law pleading, in which fine distinctions between two causes of action could lead to disaster for a client. 125

Finally, as Marcus has pointed out, there are serious structural arguments for pushing courts, at the very least, to stay trans-substantive in their process-based rulings. By doing so, they can more effectively avoid the challenge that they are "making up" rules as they go along in order to extract particular outcomes in particular cases. As Marcus puts it, "[c]ourts suffer from institutional limitations that have to do with their legitimacy, competency, and effectiveness as lawmakers. Trans-substantivity ameliorates these deficits and thereby helps improve the process law courts create and administer." ¹²⁶

There are, of course, costs to such an approach. Too strict an insistence on "common rules" can limit creativity, cause unnecessary inefficiencies, ¹²⁷ and prevent the development of useful values that come out of procedural rules tailored to address specific problems. In the end, however, this does not mean that we should abandon trans-substantive procedures, but that we should simply be careful about when we choose to do so.

B. LEGISLATURES SHOULD AVOID ALTERING TRANS-SUBSTANTIVE PROCEDURES WHERE POSSIBLE

As one might guess given his perspective on the value of judicial transsubstantivity, Marcus (and others) have less concern when it comes to legislative decisions that implement substance-specific rules. While judges are institutionally constrained from making the kinds of policy judgments that can inherently be bound up in creating substance-specific procedures, elected legislators are not. For this reason, most commentators have less concern about

^{124.} See Marcus, supra note 19, at 1220–21.

^{125.} See Marcus, supra note 120, at 379 ("Rules designed to apply equally across doctrinal categories require a level of abstraction that prevent them from explicitly expressing or manifesting a judgment as to the value of one area or another of substantive law.").

^{126.} See Marcus, supra note 19, at 1220.

^{127.} See, e.g., Stephen N. Subrin, Fudge Points and Thin Ice in Discovery Reform and the Case for Selective Substance-Specific Procedure, 46 Fl.A. L. REV. 27, 45–46 (1994).

^{128.} Marcus, *supra* note 19, at 1234 ("Trans-substantivity has no general justification that should limit the legislative prerogative to enact substance-specific process law.").

the legislative use of substance-specific procedures in statutes that are targeted to particular substantive areas of the law.

This approach to the usefulness of trans-substantivity in the legislative process is, in my mind, too relaxed, for it gives away too much of the value associated with trans-substantivity. Those values associated with trans-substantive process—which include predictability, familiarity, and ease of entry into the legal and judicial profession—could just as easily be applied to the decisions made by legislators. There is, of course, a necessary role to be played by statutes that govern particular areas of the law. For example, it would be absurd to argue that the substantive law should be the same whether one is raising children or raising crops. But many problems connected with legislative drafting, such as concerns about the influence that special interests have in legislative bodies, could be alleviated if legislatures had more familiarity with "how things work" in the legal system, and if they were resistant to substance-specific changes to well-established legal processes.

Such a limitation would have value beyond the virtue of generalization. Requiring (or at least strongly encouraging) trans-substantive procedures in legislative enactments would limit the risk that special interests could manipulate procedures in order to cloak significant gains that might not be achievable (or at least not as politically acceptable) if they were forced to "take procedure as it comes."

As Marcus notes in his comprehensive review of the principle of transsubstantivity in American procedural law, concern about legislative meddling when it comes to procedure partially motivated the creation of the federal rules of procedure and the system for their revision that we are familiar with today. ¹²⁹ That concern is the foundation of modern trans-substantive procedure, and we should reinforce its value not only in judicial decision-making, but in legislative decision-making as well.

C. Substance-Specific Procedural Enactments Merit Intensive Review by Courts

The proposition that legislatures should be subject to more intense judicial scrutiny when altering existing procedures in a substantive manner may seem somewhat radical, but I would suggest that this is, in many ways, already the rule, and that an individualized look at several of the Price-Anderson Act's substance-specific procedures will demonstrate that this is the case.

To illustrate this point, consider the limitation on judicial review of the NRC's "extraordinary occurrence" determinations under the Price-Anderson Act. The baseline rule—the trans-substantive rules—in federal administrative law is that individuals may seek judicial review if they are adversely affected or

^{129.} Marcus, *supra* note 120, at 395 ("[Clark] believed that legislative control over procedure had led to 'indifference and political manipulation,' and that it had hobbled the ability of procedural reform to keep pace with constantly evolving litigation needs" (quoting Charles E. Clark, *The Challenge of a New Federal Civil Procedure*, 20 CORNELL L.Q. 443, 457 (1935))).

aggrieved by final agency action.¹³⁰ The courts are not easily persuaded, absent very clear congressional language, to deviate from that presumption. While 5 U.S.C. § 701 of the APA excludes certain decisions from judicial review when a statute clearly does so, or when decisions are "committed to agency discretion by law," section 701(a)(2), that underlying presumption requires a clear statutory exclusion that will not be willingly implied.¹³¹ The point is not that statutes should not be able to deviate from general procedural rules—the Price-Anderson Act clearly exempts decisions under § 2014(j) from review—but rather that our system is properly laced with presumptions favoring trans-substantive procedures and looking skeptically at procedures that are designed to fit only one situation.

So judicial doctrines should look askance at legislative decisions that alter traditional procedures for the management of legal processes. The fact that these inquiries exist strongly suggests that my prior argument in Subpart III.B—that legislatures should be constrained to adhere to existing trans-substantive processes in most cases—is a principle that is already built into our legal system. Because they are familiar with the judicial and legal processes that have been built over the last eighty plus years, and the general (albeit imperfect) principles of fairness and even-handedness that these systems represent, judges are appropriately skeptical about legislative deviations from those trans-substantive baselines.

D. HIGHLY SUBSTANCE-SPECIFIC STATUTES LIKE THE PRICE-ANDERSON ACT MERIT A HIGHER LEVEL OF REVIEW IN SYSTEMIC CHALLENGES TO STATUTORY VALIDITY

This brings me to a final point. As I concede above, legislatures can and should be able to adopt substance-specific procedures in order to address particular policy problems. Considered on their own, those individual variations may well pass muster through the judicial skepticism that I discussed in Subpart III.C.

Ultimately, however, the Price-Anderson Act is *sui generis* in the scope of its substance-specific process changes. And it is in the magnitude of those changes where I believe that courts should cast a more broadly skeptical eye on the permissibility of this highly targeted statutory scheme that so fundamentally alters many of the trans-substantive procedures that would normally govern the legal principles at issue in the Act.

As discussed in *Duke Power*, above, the Supreme Court rejected the plaintiffs' argument that the court should use an intermediate level of scrutiny in considering the due process claims that they presented. Neither of the precedents offered by the plaintiffs—one in which the property deprivation was

^{130. 5} U.S.C. § 702 (2012).

^{131.} See, e.g., Bowen v. Mich. Acad. of Fam. Physicians, 476 U.S. 667, 673 (1986) (refusing to imply statutory preclusion of review).

^{132.} Duke Power Co. v. Carolina Envtl. Study Grp., Inc., 438 U.S. 59, 83 (1978).

based on gender, and the other that targeted the Contract Clause¹³³—seemed to match with the Price-Anderson Act's unique take on nuclear liability claims.¹³⁴

If we are to take this principle of trans-substantivity seriously, though, there is a case to be made that the Court was incorrect on this point, and that the collective changes that the Act makes to baseline procedures amounts to a justification for re-thinking the Court's conclusion, particularly now that the 1988 amendments have completely diverted state common law claims into federal court, and particularly in light of new facts regarding the nuclear industry and the likelihood of significant nuclear accidents.

Such an intensive inquiry would not necessarily doom the statute. But the significant substance-specific procedural changes that are reflected in the current version of the Price-Anderson Act should require significant policy justifications—justifications that might be hard to maintain more than a half-century after the Price-Anderson Act was initially adopted in order to jump-start a nuclear industry that currently supplies nearly twenty percent of the nation's energy needs. ¹³⁵

There may, of course, be different current justifications for keeping the Price-Anderson Act's limitations in place. To the degree that the Act amounts to a federal subsidy to the nuclear industry, the risks to global climate posed by greenhouse gasses may offer more support for federal subsidies of nuclear power than ever existed in the period before climate change was known to present such a clear and present danger.¹³⁶ If the extraordinary processes and protections offered to the nuclear industry by the Price-Anderson Act are justified by extraordinary need given the current risks posted by climate change, however, such a justification for the Act's unusual substance-specific processes should be subject to a searching examination by the federal courts in order to protect the integrity of trans-substantive processes, and to ensure that the unusual remedies adopted by Congress bear a reasonable relationship to the cure.

^{133.} U.S. CONST. art 1, § 10, cl. 1.

^{134.} Id. (citing Craig v. Boren, 429 U.S. 190 (1976); U.S. Tr. Co. of N.Y. v. New Jersey, 431 U.S. 1 (1977)).

^{135.} More than half the currently operational nuclear power plants are more than thirty years old. *Operational Reactors by Age*, IAEA: POWER REACTOR INFO. SYS., https://www.iaea.org/PRIS/WorldStatistics/OperationalByAge.aspx (last updated Jan. 18, 2019). Out of 454 currently operational power reactors, 249 first connected to the power grid more than thirty years ago. *Id.*

^{136.} One report consolidated a number of studies estimating the costs of climate change; the total costs ranged from \$50 to \$300 billion per year in the United States alone. JONATHAN M. HARRIS ET AL., THE ECONOMICS OF GLOBAL CLIMATE CHANGE 19–22 (2017), http://www.ase.tufts.edu/gdae/education_materials/modules/The_Economics_of_Global_Climate_Change.pdf.

APPENDIX

42 U.S.C. § 2210

(i) Compensation plans

- (1) After any nuclear incident involving damages that are likely to exceed the applicable amount of aggregate public liability under subparagraph (A), (B), or (C) of subsection (e)(1) of this section, the Secretary or the Commission¹, as appropriate, shall—
 - (A) make a survey of the causes and extent of damage; and
- (B) expeditiously submit a report setting forth the results of such survey to the Congress, to the Representatives of the affected districts, to the Senators of the affected States, and (except for information that will cause serious damage to the national defense of the United States) to the public, to the parties involved, and to the courts.
- (2) Not later than 90 days after any determination by a court, pursuant to subsection (o) of this section, that the public liability from a single nuclear incident may exceed the applicable amount of aggregate public liability under subparagraph (A), (B), or (C) of subsection (e)(1) of this section the President shall submit to the Congress—
- (A) an estimate of the aggregate dollar value of personal injuries and property damage that arises from the nuclear incident and exceeds the amount of aggregate public liability under subsection (e)(1) of this section;
- **(B)** recommendations for additional sources of funds to pay claims exceeding the applicable amount of aggregate public liability under subparagraph (A), (B), or (C) of subsection (e)(1) of this section, which recommendations shall consider a broad range of possible sources of funds (including possible revenue measures on the sector of the economy, or on any other class, to which such revenue measures might be applied);
- (C) 1 or more compensation plans, that either individually or collectively shall provide for full and prompt compensation for all valid claims and contain a recommendation or recommendations as to the relief to be provided, including any recommendations that funds be allocated or set aside for the payment of claims that may arise as a result of latent injuries that may not be discovered until a later date; and
- **(D)** any additional legislative authorities necessary to implement such compensation plan or plans.
- (3)(A) Any compensation plan transmitted to the Congress pursuant to paragraph (2) shall bear an identification number and shall be transmitted to both Houses of Congress on the same day and to each House while it is in session.

- **(B)** The provisions of paragraphs (4) through (6) shall apply with respect to consideration in the Senate of any compensation plan transmitted to the Senate pursuant to paragraph (2).
- (4) No such compensation plan may be considered approved for purposes of subsection (e)(2) of this section unless between the date of transmittal and the end of the first period of sixty calendar days of continuous session of Congress after the date on which such action is transmitted to the Senate, the Senate passes a resolution described in paragraph 6^2 of this subsection.
 - (5) For the purpose of paragraph (4) of this subsection—
- (A) continuity of session is broken only by an adjournment of Congress sine die; and
- **(B)** the days on which either House is not in session because of an adjournment of more than three days to a day certain are excluded in the computation of the sixty-day calendar period.
 - (6)(A) This paragraph is enacted—
- (i) as an exercise of the rulemaking power of the Senate and as such it is deemed a part of the rules of the Senate, but applicable only with respect to the procedure to be followed in the Senate in the case of resolutions described by subparagraph (B) and it supersedes other rules only to the extent that it is inconsistent therewith; and
- (ii) with full recognition of the constitutional right of the Senate to change the rules at any time, in the same manner and to the same extent as in the case of any other rule of the Senate.
- **(B)** For purposes of this paragraph, the term "resolution" means only a joint resolution of the Congress the matter after the resolving clause of which is as follows: "That the approves the compensation plan numbered submitted to the Congress on __ 19 .", the first blank space therein being filled with the name of the resolving House and the other blank spaces being appropriately filled; but does not include a resolution which specifies more than one compensation plan.
- **(C)** A resolution once introduced with respect to a compensation plan shall immediately be referred to a committee (and all resolutions with respect to the same compensation plan shall be referred to the same committee) by the President of the Senate.
- (**D**)(i) If the committee of the Senate to which a resolution with respect to a compensation plan has been referred has not reported it at the end of twenty calendar days after its referral, it shall be in order to move either to discharge the committee from further consideration of such resolution or to discharge the

committee from further consideration with respect to such compensation plan which has been referred to the committee.

- (ii) A motion to discharge may be made only by an individual favoring the resolution, shall be highly privileged (except that it may not be made after the committee has reported a resolution with respect to the same compensation plan), and debate thereon shall be limited to not more than one hour, to be divided equally between those favoring and those opposing the resolution. An amendment to the motion shall not be in order, and it shall not be in order to move to reconsider the vote by which the motion was agreed to or disagreed to.
- (iii) If the motion to discharge is agreed to or disagreed to, the motion may not be renewed, nor may another motion to discharge the committee be made with respect to any other resolution with respect to the same compensation plan.
- (E)(i) When the committee has reported, or has been discharged from further consideration of, a resolution, it shall be at any time thereafter in order (even though a previous motion to the same effect has been disagreed to) to move to proceed to the consideration of the resolution. The motion shall be highly privileged and shall not be debatable. An amendment to the motion shall not be in order, and it shall not be in order to move to reconsider the vote by which the motion was agreed to or disagreed to.
- (ii) Debate on the resolution referred to in clause (i) of this subparagraph shall be limited to not more than ten hours, which shall be divided equally between those favoring and those opposing such resolution. A motion further to limit debate shall not be debatable. An amendment to, or motion to recommit, the resolution shall not be in order, and it shall not be in order to move to reconsider the vote by which such resolution was agreed to or disagreed to.
- **(F)(i)** Motions to postpone, made with respect to the discharge from committee, or the consideration of a resolution or motions to proceed to the consideration of other business, shall be decided without debate.
- (ii) Appeals from the decision of the Chair relating to the application of the rules of the Senate to the procedures relating to a resolution shall be decided without debate.