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The New Nuclear Power Generation Licensing Scheme in Its Defining Moment: A Regulatory Vessel Equipped to Support a Thriving Industry or Drifting Towards Stormy Waters Capable of Running the Nuclear Revival Aground?

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The New Nuclear Power Generation Licensing Scheme in Its Defining Moment: A Regulatory Vessel Equipped to Support a Thriving Industry or Drifting Towards Stormy Waters Capable of Running the Nuclear Revival Aground?

Anna Knecht*

Abstract

This Student Note assesses Congress and the Nuclear Regulatory Commission's "new" nuclear licensing scheme by way of comparison with the old, two-step process under which the industry endured an era of dormancy lasting nearly forty years. With a focus on the novel ITAAC review process, this Note argues that while the Part 52 process is superior to its predecessor, certain significant issues (articulated herein) must be resolved before the new regulatory framework can support the economic, environmental, safety, and other advantages it aims to achieve.

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* Candidate for J.D., Washington & Lee University School of Law, May 2012. I would like to thank Professor Albert V. Carr for his invaluable guidance and my family and those who might as well be for the constant love and support. I will also be forever grateful for the comic relief of the late R.S. Hornsby. This Note is in memory of the victims of the Fukushima disaster. May we strive to get this right in their honor.

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I. Introduction

Now, I know it has been assumed that those who champion the environment are opposed to nuclear power. But the fact is, even though we have not broken ground on a new nuclear power plant in [decades], nuclear energy remains our largest source of fuel that produces no carbon emissions. To meet our growing energy needs and prevent the worst consequences of climate change, we'll need to increase our supply of nuclear power. It's that simple.¹

These words of our current President, hailing from the political party historically opposed to nuclear power, are suggestive of a sea of change. Despite strong currents of opposition to nuclear power in the United States,²

1. Press Release, White House Office of the Press Sec'y, Obama Admin. Announces Loan Guarantees to Construct New Nuclear Power Reactors in Ga. (Feb. 16, 2010), <http://www.whitehouse.gov/the-press-office/obama-administration-announces-loan-guarantees-construct-new-nuclear-power-reactors> (last visited April 16, 2012) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment); *see also* Interview by Jonathan Fahey with Christine Todd Whitman, Former EPA Adm'r and N.J. Governor (Jan. 13, 2010), <http://www.forbes.com/2010/01/13/christine-todd-whitman-business-energy-whitman.html> ("Unless we embrace . . . nuclear it's going to be very hard to see how we get to a place where we have [twenty-four/seven] reliable, affordable power that doesn't degrade the environment.").

2. *See, e.g.*, Press Release, Nuclear Info. Res. Serv., Safe, Clean Energy Advocates Reject Obama's Call for More Nuclear Power (Jan. 30, 2010), <http://www.nirs.org/press/01-30-2010/2> (last visited April 16, 2012) ("President Obama must rethink his priorities, and

it seems we are in the midst of a “nuclear renaissance”³ in the industry, after several decades of dormancy.⁴ In the recent midterm State of the Union address, the President highlighted his proposed energy plan, which included nuclear power at the fore, further suggestive of the political popularity of facilitating development of the industry.⁵

Many factors are propelling this renaissance. Consider the following: increases in fuel prices,⁶ heightened concerns over global warming,⁷ the *Deepwater Horizon* disaster,⁸ unrest in nations that are a source of natural gas,⁹ significant developments in nuclear technology,¹⁰ daunting rates of unemployment,¹¹ rising political support of nuclear

quickly . . . Nuclear is not a climate solution; indeed, it would make the problem worse by diverting tens of billions of dollars that could be spent on safe, clean, cost-effective energy sources.”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

3. See, e.g., Roland M. Frye, Jr., *The Current “Nuclear Renaissance” in the United States, Its Underlying Reasons, and its Potential Pitfalls*, 29 ENERGY L.J. 279, 287 (2008) (arguing that the oft-used catch phrase “nuclear renaissance” is in fact a reality in the United States).

4. See, e.g., Steven Mufson, *Firm Applies to Expand Nuclear Plant in Maryland*, WASH. POST (July 31, 2007), available at http://www.washingtonpost.com/wp-dyn/content/article/2007/07/30/AR2007073001881_pf.html (quoting NRC spokesman who noted that Constellation Energy Group’s submission was “the first application to operate and build a new reactor that the NRC has received in about 30 years”).

5. See President Barack Obama, State of the Union Address, ¶ 32 (Jan. 25, 2011), available at <http://www.npr.org/2011/01/26/133224933/transcript-obamas-state-of-union-address> (setting forth his proposal for an energy plan, noting the necessity of nuclear power generation within that plan).

6. See, e.g., Derek Thompson, *Can the Oil Shock Alone Explain the Financial Crisis*, ATLANTIC (Apr. 21, 2009), available at <http://www.theatlantic.com/business/print/2009/04/can-the-oil-shock-alone-explain-the-financial-crisis/16459/> (noting that an oil shock could possibly have been “a significant catalyzer for the push toward energy reform”).

7. See, e.g., Michael Totty, *Nuclear’s Fall—and Rise*, WALL ST. J., Apr. 17, 2010, at R6 (noting the relationship between global warming and the increased attention on nuclear power).

8. See, e.g., Jonathan Weisman, *Obama: Oil Spill Shows Need for Alternative Fuels*, WALL ST. J. BLOG (May 26, 2010, 4:23 PM), <http://blogs.wsj.com/washwire/2010/05/26/obama-oil-spill-shows-need-for-alternative-fuels/> (“[T]he spill in the Gulf, which is just heartbreaking, only underscores the necessity of seeking alternative fuel sources.”).

9. See, e.g., Steven Erlanger, *Oil Flows, But High Prices Jangle Nerves*, N.Y. TIMES, Feb. 12, 2011, at A12 (noting that unrest in the Middle East has motivated the world to move toward alternative energy sources and to examine nuclear power specifically).

10. See, e.g., *Nuclear’s Next Generation*, ECONOMIST (Dec. 10, 2009), <http://www.economist.com/node/15048703/> (describing six new designs for nuclear power reactors that are alleged to provide advances in safety and efficiency and noting how prior to these developments little progress had been made regarding the technology underpinning the civilian nuclear power generation since the 1950s).

11. See, e.g., Steve Lohr, *The New Jobs in Atomic Energy*, N.Y. TIMES (Apr. 21, 2010), <http://www.nytimes.com/2010/04/22/business/energy-environment/22TECH.html>

power,¹² and projected increases in energy demand¹³—these are just some of the forces which together suggest the development of a new fleet of nuclear plants in the United States not only makes sense, but is inevitable. Our most recent presidential campaign, in which candidates from both parties supported nuclear power within their respective energy plans,¹⁴ indicates that the American public is on board. The successful development of a new fleet of safe, operational plants would be a titanic achievement with far-reaching implications.

In isolation, the factors noted may suggest that end is inevitable; however, various forces are capable of thwarting the course. Finding a workable plan to deal with spent fuel, wading through the fallout of the global financial crisis, avoiding a catastrophe related to nuclear proliferation, and, *critically*, reviving and maintaining a viable regulatory scheme are just a few of the challenges that must be met if this nuclear renaissance is to thrive.¹⁵ What follows is an analysis of one key component: the regulatory scheme, specifically, the licensing of new nuclear plants. The current wave of plant development is taking place under a new licensing scheme promulgated by Congress and the Nuclear Regulatory Commission (“NRC”), a process that is largely untested to date.¹⁶ A navigable, legally permissible licensing framework is a prerequisite for this fleet if it is to avoid the fate of the last tranche of nuclear reactors whereby some plants met their demise even before going on-line,¹⁷ part of a series of events that precipitated an era of dormancy in the nuclear industry that lasted upwards of forty years.

(noting the job creation that will be a consequence of both constructing and operating a new nuclear facility).

12. See *infra*, Part II.C.2 (specifying some of the federal legislation enacted to support development of the nuclear industry).

13. See *Annual Energy Outlook 2010, Electricity Demand*, U.S. ENERGY INFO. ADMIN. (May 11, 2010), <http://www.eia.gov/oiaf/archive/aeo10/electricity.html> (last visited April 16, 2012) (projecting that total electricity demand will increase thirty percent by 2035) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

14. See, e.g., David Jackson, *McCain, Obama Promote Nuclear Energy Plans*, U.S.A. TODAY (Aug. 6, 2008), http://www.usatoday.com/news/politics/election2008/2008-08-05-mccain-nuclear_N.htm (noting Democratic and Republican presidential candidates’ support of nuclear power in an energy plan, albeit to varying degrees).

15. See Frye, *supra* note 3, at 287 (setting forth a comprehensive discussion of nine factors which could lead to the derailment of the renaissance).

16. See *Combined License Applications for New Reactors*, NUCLEAR REGULATORY COMM’N, <http://www.nrc.gov/reactors/new-reactors/col.html> (last visited April 16, 2012) (indicating that no COL has been issued to date, thus no construction has begun and no ITAAC have expired according to Part 52) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). Note that “construction” is a term of art. See 10 C.F.R. § 50.2 (2010) (defining construction); see also, *infra* notes 101–02 and accompanying text (discussing the limited work authorization that allows initial excavation and other site work up to the point of laying the foundation).

17. See, e.g., Press Release, Nuclear Regulatory Comm’n, NRC Staff Terminates

This Note argues that this new regulatory scheme, while superior to the old licensing process, must resolve significant licensing issues if it is to provide the basis for the thriving nuclear industry that many hope will support America's growing power needs. Part II describes the new licensing process affecting the current generation of nuclear plants by way of contrast with the old two-step licensing scheme, with an emphasis on the novel pre-operational Inspections, Test, Analyses, and Acceptance Criteria ("ITAAC")¹⁸ review process. Part III describes how, despite the current ITAAC review process's efficiency advantages, in present form, the process falls short in two ways: (1) by failure to provide legally sufficient opportunity for public participation and (2) by effective reversion to the two-step process that has proven antithetical to successful development in the nuclear power industry. Part IV describes how operational modifications by industry members and the NRC, along with mechanisms to provide for administrative flexibility, may provide the regulatory foundation that allows the new licensing process to support a thriving nuclear energy program. Finally, Part V concludes that the new licensing scheme has the potential to provide the regulatory framework for this new fleet of reactors to attain enormous energy, environmental, safety, and economic advantages—but not without significant additional yet feasible steps taken by industry and the regulators.

II. *The New Nuclear Licensing Process*

A thorough understanding of the new licensing process that governs this generation of nuclear plants requires a solid grasp of the context in which it is currently operating and the underlying historical

Shoreham License; Authorizes Release of Site (Apr. 12, 1995) (describing the history of the Shoreham facility that was shut down in 1987 two years after receiving its operating license, having never gone into operation) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment); Robert T. Grieves et al., *A \$1.6 Billion Nuclear Fiasco*, TIME MAG. (Oct. 31, 1983), <http://www.time.com/time/magazine/article/0,9171,921377,00.html> (describing the financial, managerial, construction, and other problems at Cincinnati Gas & Electric's Zimmer plant that led to the plant's cancellation after spending billions of dollars). While the Shoreham facility was shut down and never utilized, the Zimmer facility later converted to coal-fired generation.

18. See *infra* Part III (explaining the ITAAC review process at length). Implicit in any reference to ITAAC is the following definition: The specific inspections, tests, and analyses regarding a single component that the holder of a combined license shall perform, and acceptance criteria that "are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will be operated in conformity" with the combined license, the provisions of the Atomic Energy Act, and the NRC's rules and regulations. 10 C.F.R. § 52.17(b)(3) (2011).

developments that led to the regulatory scheme as it exists today.¹⁹ This essential building block is set forth in subpart A. Next, subpart B highlights specific defects of the old process that the new one intended to cure. With this foundation, subpart C describes the technical aspects of the new licensing scheme and discusses how it is functioning in its nascent stage. Central to this discussion is a keen focus on the novel ITAAC pre-operational review and its desired role within the regulatory scheme as current nuclear plant development makes headway.

A. Historical Context

The Atomic Energy Act of 1954²⁰ set forth government approval for private access to technical nuclear energy information for the first time, signaling the beginning of the end of the government monopoly on nuclear technology, thus paving the way for commercial nuclear power generation.²¹ The first fleets of commercial nuclear reactors were licensed primarily under the Atomic Energy Commission²² regulations, interchangeably referred to herein as the Part 50 regulations, the old process, or the two-step process.²³

Plants that went into operation under the two-step process were required to obtain separate construction and operating licenses.²⁴ Given the

19. For the remainder of this Note, the term “regulatory scheme” will refer specifically to the new plant licensing regulations. While nuclear regulations in fact encompass a vastly broader range of activities, in this analysis, the term will pertain to the very focused topic at issue, the licensing regulations for new nuclear power generation facilities.

20. See Atomic Energy Act of 1954, 42 U.S.C. §§ 2011–2282 (1954) (amending the Atomic Energy Act of 1946 by adding provisions to govern both civilian and military use of nuclear materials, more specifically, the development and regulation of the use of materials in American nuclear facilities).

21. See *id.* § 2011(b) (“[T]he development, use and control of atomic energy shall be directed so as to promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise.”).

22. The Atomic Energy Commission was the first nuclear regulatory agency in the United States; its regulatory functions were transferred to the newly-created NRC by the Energy Reorganization Act of 1974. See 42 U.S.C. §§ 5814, 5841 (2006) (setting forth the AEC’s abolition and transfer of power to the new agency). For the purposes of this Note, “NRC” refers to both regulatory agencies.

23. See generally 10 C.F.R. pt. 50 (1976) (setting forth the two-step licensing scheme regulating development of the first commercial fleet of nuclear reactors). While Part 50 licensing regulations went into effect in 1956, see 21 Fed. Reg. 355–60 (Jan. 19, 1956), and remain to some extent today, the focus of this section will be on these regulations and their effect as they applied to vendors seeking licenses starting in the early 1970s, when vendors increased plant size to the 1100–1250 MWE range.

24. See 10 C.F.R. § 50.10(c) (2011) (providing that a construction permit was a necessary prerequisite to beginning construction); see also 10 C.F.R. § 50.20(b) (2011) (providing that an operating license was a necessary prerequisite for operating a nuclear facility).

nature of the process of building a nuclear facility, the time that lapsed between the grant of a construction permit and the grant of an operating license was significant.²⁵ The example of the North Anna Power Station proves illustrative: the NRC's Atomic Safety and Licensing Board granted Virginia Electric Power Company its construction permits for two reactor units at the North Anna Power Station in February 1971.²⁶ The operating licenses were not granted until April 1978 and August 1980 for Units 1 and 2 respectively.²⁷ This example is typical in that nearly a decade passed between these milestones, a time in which countless modifications to the original construction permit were necessarily made.²⁸ Nearly \$4 billion was exhausted on construction alone (a figure that is dwarfed by the comparable construction cost figures for the current fleet).²⁹ And receipt of an operating license after these massive expenditures, capital and otherwise, was far from certain.

The Part 50 licensing regulations required a company pursuing development of a nuclear power facility to submit an application to the NRC for a construction permit.³⁰ The submission did not represent the beginning of the process for a prospective licensee, given the numerous and often technical details required in each application,³¹ rather, it represented

25. See, e.g., Richard J. Pierce, Jr., *The Regulatory Treatment of Mistakes in Retrospect: Canceled Plants and Excess Capacity*, 132 U. PA. L. REV. 497, 504 (1984) (noting that nuclear projects were taking ten to twelve years on average).

26. See Construction Permits CPPR-77 & CPPR-78, Nos. 50-338 & 50-339 (A.E.C. Feb. 19, 1971) (issuing a construction permit for North Anna Units 1 and 2).

27. See Facility Operating License, NPF-4, No. 50-338 (N.R.C. Apr. 1, 1978) (issuing an operating license for North Anna Unit 1); Virginia Electric and Power Company, Facility Operating License, NPF-7, No. 50-339 (N.R.C. Aug. 21, 1980) (issuing an operating license for North Anna Unit 2).

28. See, e.g., Amendment No. 9 to Facility Operating License, NPF-4, No. 50-338 (N.R.C. Feb. 23, 1979) (issuing the ninth amendment to the facility operating license in less than one year).

29. See, e.g. *Independent Statistics and Analysis, Virginia Nuclear Profile*, U.S. ENERGY INFO. ADMIN., http://www.eia.doe.gov/cneaf/nuclear/state_profiles/virginia/va.html (last visited April 16, 2012) (noting construction costs for North Anna Units 1 and 2) (on file with the Journal of Energy, Climate, and the Environment). Most projected figures for the new generation of reactors are exponentially higher than those described in the EIA data for the first two reactors at North Anna. The projected cost for Vogtle, for example, is \$14.5 billion and counting. See Rob Pavey, *Vogtle's Owners Waiting for Approval*, AUGUSTA CHRON. (Nov. 10, 2010), <http://chronicle.augusta.com/news/metro/2010-11-10/vogtles-owners-waiting-approval> (noting the estimated project costs as of late 2010).

30. See 10 C.F.R. § 50.10(c) (2011) ("No person may begin the construction of a production or utilization facility on a site on which the facility is to be operated until that person has been issued . . . a construction permit under this part . . ."). Note that "construction" is a term of art defined by the regulation. See 10 C.F.R. § 50.10(a) (2010).

31. See 10 C.F.R. § 50.34 (2011) (setting forth the technical requirements that must be included in every construction permit application submitted to the NRC for review, such as a preliminary and final safety analysis reports (which include environmental and other reviews), a physical security plan, and a safeguards contingency plan to name a few).

the first major instance in which the regulatory agency would provide official review.³² To reach this stage, an applicant must have participated in substantial financial planning, business negotiations, safety and environmental research, and other preliminary activities. Upon the NRC staff's decision that the application was sufficient—that is, the applicant met the regulatory requirements set forth in 10 C.F.R. § 50.34—the staff would then docket the application and set the schedule for a comprehensive review.³³ A brief look at an application that reached this stage reveals the significant investment that was necessary to simply “initiate” the licensing process.³⁴

Upon acceptance for staff review, the agency would schedule, publicize, and hold a public meeting at the contemplated site to inform the public of the proposed location and type of plant, along with safety, environmental, and other relevant aspects of the pending application.³⁵ The NRC would hold several such meetings while an application was under review to keep the public apprised of the progress throughout the reactor licensing process.³⁶ Once the NRC staff and the Advisory Committee on Reactor Safeguards³⁷ completed their respective reviews, their findings were submitted to the Commission by way of letter to the NRC Chairman.³⁸

Prior to the issuance of a construction permit for any commercial generation facility, the Atomic Energy Act mandates a licensing hearing³⁹ conducted by the NRC's three-member Atomic Safety and Licensing Board

32. Cf. 10 C.F.R. § 2.101(a)(1) (2011) (setting forth the procedural requirements for submitting applications, and explicitly granting prospective applicants permission to informally communicate with the NRC prior to filing an application).

33. See 10 C.F.R. § 2.102 (2011) (setting forth docketing and other processes for administrative review of an application).

34. See, e.g., Consol. Edison Co. of New York, Inc., Summary of Application, No. 50-286 (A.E.C. Feb. 25, 1969) (summarizing the application for a license for Indian Point Unit 3 in eighty-two pages of text, implying that substantial technical and other workup was involved prior to submitting an application).

35. See, e.g., *Backgrounder on Nuclear Power Plant Licensing Process*, NUCLEAR REGULATORY COMM'N (July 2005), available at <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/licensing-process-bg.html> (describing the initial site meeting held by the NRC).

36. See *id.* (describing the informal public meetings the NRC held to keep the public apprised of developments regarding potential projects).

37. See *id.* (“The Advisory Committee on Reactor Safeguards (ACRS) [is] an independent group that provides advice on reactor safety to the five-member Commission [and] reviews each application to construct or operate a nuclear power plant.”).

38. See *id.* (noting that the ACRS submits its findings to Chairman of NRC).

39. See Atomic Energy Act of 1954, 42 U.S.C. § 2239(a)(1)(A) (“The Commission shall hold a hearing after thirty days’ notice and publication once in the Federal Register, on each application under section 2133 . . . of this title for a construction permit for a facility”); see also *infra*, note 114 and accompanying text (discussing the mandatory hearing requirement in the context of the new licensing regulations, whereby this hearing occurs at the COL stage).

(“ASLB”).⁴⁰ This public hearing was held once the staff completed its review and prepared the Safety and Evaluation Report (detailing the expected effects of the proposed plant on public health and safety) and the Final Environmental Impact Statement (having received and addressed comments to its draft statement from appropriate government agencies and the public).⁴¹ Members of the public were permitted to submit written or oral statements or to petition for leave to intervene as official parties in the hearing.⁴² Beginning in the early 1970s, petitions to intervene and submit contentions started to flow into the NRC.⁴³

Aspects of the proceeding involving Houston Lighting and Power Company’s (“HL&P”) pursuit of a construction permit for its Allens Creek Nuclear Generating Station provide a useful illustration of how, under the old process, procedural rules were so liberally interpreted so as to deprive them of their facial meaning with regard to intervening and submitting contentions in a hearing. HL&P applied for a construction permit in August 1973, and in March 1978 the ASLB initiated the mandatory hearing proceeding by inviting the filing of petitions to intervene and submission of contentions.⁴⁴ In response to a *pro se* litigant’s petition for leave to intervene, the ASLB issued an unpublished opinion in March 1980 in which it rejected the petitioner’s contention, ultimately denying his petition for leave to intervene.⁴⁵ Under the old regulations, an outright denial of a petition was subject to interlocutory appellate review, and the petitioner

40. See 10 C.F.R. § 2.321 (2011) (granting the Commission authority to establish ASLBs to conduct administrative hearings regarding granting, suspending, revoking, or amending licenses).

41. See, e.g., Consol. Energy Co. of New York Construction Permit Hearing Transcript, No. 50-247 (A.E.C. Dec. 18, 1970) (referencing the Safety and Evaluation Report and the Final Environmental Impact Statement).

42. See 10 C.F.R. § 2.315(a) (2010) (“A person who is not a party . . . may, in the discretion of the presiding officer, be permitted to make a limited appearance by making an oral or written statement of his or her position on the issues at any session of the hearing or any prehearing conference . . .”).

43. See *infra* notes 49–53 and accompanying text (discussing the low procedural hurdles for intervening in a licensing proceeding, derived not from the regulations themselves, rather from the interpretation of those regulations). Another significant reason for this increase in public intervention was the fact that vendors increased output of facilities by about one-third around this time.

44. See Donald K. Hill, *Regulating the Termination of Proposed Nuclear Power Plant in Texas: The Allens Creek Experience*, 15 ST. MARY’S L. J. 299, 301 n.7 (setting forth the chronology of events related to Houston Lighting and Power Company’s Allens Creek project).

45. See Houston Lighting and Power Co. (Allens Creek Nuclear Generating Station Unit 1), ALAB-590, 11 N.R.C. 542, 543–44 (1980) (setting forth the facts of the proceeding before the ASLB which were the subject of the appeal).

timely filed an appeal.⁴⁶ In addition to granting the unrepresented petitioner greater leeway in satisfying the pleading standard in these proceedings,⁴⁷ the Atomic Safety and Licensing Appeal Board (the “Appeal Board”) reversed the ASLB’s order denying petitioner’s intervention, thus reviving his petition.⁴⁸

In so doing, the Appeal Board looked to uniformly established precedent⁴⁹ interpreting the language of the relevant NRC procedural regulations.⁵⁰ Despite the fact that the NRC Rules of Practice contain an explicit demand for supplying a basis for a contention with reasonable specificity as a prerequisite for intervening, the Appeal Board found that those rules “have been uniformly interpreted” merely to require a petitioner to state reasons for a contention,⁵¹ with no additional requirement that he attempt to justify such reasons.⁵² Through consistent application of this uniform interpretation, the appeal board effectively wrote out the procedural requirement set forth in § 2.714 and replaced it with a significantly more lenient standard, defined by the agency’s case law.

The practical effect of this decision regarding Allens Creek was a holding that granted leave for petitioner to intervene.⁵³ The appeal board rejected arguments of both the NRC staff and HL&P, claiming the alleged basis was “impermissibly vague” and insufficient under the plain language

46. See 10 C.F.R. § 2.749(b) (1980) (“[A]n order wholly denying a petition for leave to intervene . . . is appealable by the petitioner on the question of whether the petition . . . should have been granted in whole or in part.”).

47. See *Houston Lighting and Power Co.*, ALAB-590, 11 N.R.C. at 546 (“[A]lthough a totally deficient pleading may not be justified on the basis that it was prepared without the assistance of counsel, a *pro se* petitioner is not to be held to those standards of clarity and precision to which a lawyer might reasonably be expected to adhere.” (citation omitted)).

48. See *id.* at 551 (reversing and remanding the ASLB decision for further consideration of the petition for leave on the grounds set forth in the opinion).

49. See *Mississippi Power and Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 A.E.C. 423, 426 (1973) (affirming the ASLB’s grant of a petition to intervene and interpreting contentions as meeting the requirements set forth in 10 C.F.R. § 2.714(a) without requiring a detailed evidence to support the contention). Note that the precedent cited was issued in 1973, thus this liberal interpretation of the regulation had been applied by the agency for several years by the time of this Allens Creek decision.

50. See 10 C.F.R. § 2.714(a) (1980) (stating that interested parties may submit a petition to intervene that shall identify “specific aspect or aspects of the subject matter of the proceeding as to which he wishes to intervene and [set] forth with particularity both the facts pertaining to his interest and the basis for his contentions. . .”) (emphasis added); *id.* § 2.714(b) (requiring a petition set forth the basis for each contention with reasonable specificity).

51. *Houston Lighting and Power Co.*, ALAB-590, 11 N.R.C. at 549.

52. See *id.* at 548 (noting that a reason supporting the contention would suffice and that providing detailed evidence was not necessary in a petition for leave to intervene).

53. See *id.* at 551 (reversing and remanding the ASLB’s decision denying the petition to intervene with instructions to accept the contention and allow petitioner to intervene).

of the agency's own procedural rule;⁵⁴ instead, it relied solely on petitioner's assertion that a marine biomass farm, alleged to be a viable alternative energy source to a nuclear facility, was not considered in HL&P's application.⁵⁵ The appeal board arrived at this conclusion despite its *expressed* doubt that a marine biomass farm was a viable alternative⁵⁶ and despite petitioner's reliance on a report that made no such claim.⁵⁷

Some opponents of nuclear power generation recognized the agency's generous granting of petitions to intervene in licensing proceedings. With that, the floodgates opened: Those opposed to nuclear power were able to exploit the process as a tactic to anchor the proceeding from moving forward for significant periods of time.⁵⁸ Individuals and organized groups alike were capable of generating a storm within the NRC hearing process with relative ease.⁵⁹

To fully comprehend the problematic nature of the bifurcated process, recognition of the context in which this occurred is critical: Note the infancy of the overall process at the permit application phase for this generation of facilities. The issues that tended to surface in these hearings were merely those of site suitability: geology, seismology, meteorology, hydrology, and environmental concerns, along with any other possible impacts of construction and operation.⁶⁰ The structure of the old licensing process was such that more often than not, plant design was merely a concept when construction began (and an even less developed concept

54. *Id.* at 545.

55. *See id.* (stating the petitioner's contention exclusively relied on the *Project Independence* report).

56. *See id.* at 549 (noting that the petitioner should be granted leave to intervene despite the appeal board's explicit skepticism regarding the claim's merit).

57. *See id.* at 555 (dissenting opinion) ("The [*Project Independence* Report] itself does not offer the marine biomass farm as such an alternative.").

58. *See, e.g.,* Ann Carl, *The Lloyd Harbor Study Group Intervention—A Response*, 28 BULL. OF THE ATOMIC SCIENTISTS 31, 31 (1972) (describing one groups opposition strategy). They stated:

[T]he construction of nuclear plants should be held up. We, therefore, made the decision to oppose all nuclear plants proposed [In the Shoreham hearing,] we decided not to limit our intervention to one or two highly specific and relevant issues . . . but [instead] to bring as much adversary evidence to the hearing as we could. Facts and opinions would then be sworn and documented in the record[.]

Id. The hearing transcript in that proceeding turned out to be over thirteen thousand pages long, and their strategy was employed despite their admission that "winning" in the construction permit hearing was not possible. *Id.*

59. *See id.* (describing a highly organized group's strategy to intervene and noting how their strategy "undoubtedly influenced other interventions").

60. *See, e.g.,* Houston Lighting and Power Co., ALAB-590, 11 N.R.C. at 545 ("I contend building and operating a marine biomass farm, or other biomass production systems, would be environmentally preferable to [Allens Creek Nuclear Generating Station] and ask the Board to deny the permit . . .").

when the application for the construction permit was first submitted to the agency).⁶¹

Given the incipient phase of a particular project, hopeful intervenors had the ability to submit contentions on these site suitability issues with ease; however, the opportunity for other effective objections generally did not present itself at this stage—this was so because the applicants themselves had not yet fully developed the specifications regarding design and operation of the facility, leaving little to contest at this point with regard to significant issues that would eventually require critical evaluation before the NRC could grant an operating license.⁶² With this understanding of the construction permit phase of the old regulatory process and the context in which it operated, one might sense the storm brewing while the applicant steered toward step two of the process: obtaining an operating license.

With a Part 50 construction permit in hand, an applicant had the green light from the agency to commence construction.⁶³ While companies advanced toward seeking to obtain an operating license, much transpired—this phase typically lasted several years and a majority of the components were actually developed and implemented during this time.⁶⁴ The broad outlines set forth in the construction permit application as proposals to meet the § 50.34 requirements were actualized while construction was ongoing.⁶⁵ However, nuclear generation facility projects that were initiated in the 1970s met a harsh reality after construction was complete—in 1983, for example, the plants completed that year cost approximately ten times the

61. See, e.g., Carl, *supra* note 58, at 33 (describing one expert's testimony that "it would be impossible to predict" if the utility could comply with the agency's criteria since "no design had been presented and none of the loads, stresses, or safety margins were known"). It is important to understand that even the lapse of time between the initial application and the eventual grant of a construction permit could be substantial. Oftentimes, the NRC staff determined that the application was insufficient, precipitating a period of back-and-forth between the prospective applicant and the agency until the staff was satisfied that the application requirements set forth in § 50.34 were met. Even when the staff accepted the application for official review, substantial time passed while the agency performed its in-depth review; all the while, design specifics took shape.

62. See, e.g., *id.* (implying that specific challenges to the design were impossible since design was not defined at the construction permit stage).

63. See 10 C.F.R. § 50.10(c) (2011) (suggesting that once the permit was obtained, construction of a facility was permitted). A notable and often-used exception to the construction permit requirement is the Limited Work Authorization, see *infra* notes 101–02 and accompanying text (discussing the Limited Work Authorization in the context of the new licensing process).

64. Cf. Pierce, *supra* note 25, at 504 (noting that construction took on average over a decade and that there was often a "significant disparity between prediction and reality" with regards to completing a facility).

65. Cf. *id.* (noting that completed plants often cost ten times the amount initially projected, implying that the conceptual design at the outset of a project was developed and substantially altered while construction was ongoing).

amount of the initial projections and took an average of ten to twelve years to finish construction.⁶⁶

It is in this context that the next step under the Part 50 process took place, whereby licensees had to apply for an operating license as the construction phase was nearing its end—obtaining such a license was a regulatory prerequisite to loading fuel to begin operation.⁶⁷ While a public hearing was not mandatory as was the case in the construction permit application phase, the agency did provide an opportunity for one.⁶⁸

Because a majority of a plant's components were designed throughout the construction process, entirely different sets of issues were the subject of public contentions in the operation license proceedings.⁶⁹ Consideration for an operating license required the agency's evaluation of several issues, for example, safety concerns, conformity with the construction permit (even though a significant percentage of the reactor design took place after the construction permit was granted), adequate management of thousands of contractors and subcontractors, and other concerns, all of which required intensive documentation of construction and management thereof in order to provide assurance to the agency upon review.⁷⁰ The issues that surfaced in the operating license proceedings, therefore, were mostly those of quality assurance, and the scope of these proceedings was broad.

In an operating license proceeding, the utility carried the burden of proving that the design was adequate and the plant had been constructed accordingly.⁷¹ An application required a final safety analysis report.⁷² Consider the challenge for hopeful licensees: The implementation of each

66. See, e.g., *id.* (noting how experts projected that nuclear facilities would be relatively inexpensive when projects were initiated, which was not the reality when all was said and done).

67. See 10 C.F.R. § 50.10(c) (2011) (setting forth the license requirement).

68. See Atomic Energy Act of 1954, 42 U.S.C. § 2239(a)(1)(A) (“The Commission shall grant a hearing *upon the request* of any person whose interest may be affected by the proceeding, and shall admit any such person as a party to such proceeding.” (emphasis added)).

69. See *supra* note 60 and accompanying text (noting that the typical issues in the mandatory hearing in the construction permit proceeding were those related to site suitability).

70. See, e.g., Joseph F. Hennessey, *Licensing of Nuclear Power Plants by the Atomic Energy Commission*, 15 WM. & MARY L. REV. 487, 495 (1974) (noting that issues that went unresolved following the construction permit application review were triggering operating license hearings in almost all cases in 1974).

71. See, e.g., Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), LBP-84-24, 19 N.R.C. 1418, 1437 (1984) (noting that the applicant had the burden of proof once the intervenor met the threshold for admitting contentions in an operating license proceeding).

72. See NUCLEAR REGULATORY COMM'N., *supra* note 35, ¶ 15 (noting that construction permit holders must submit a Final Safety Analysis Report with their operating license applications).

component was carried on by thousands of contractors and subcontractors that the licensee had to manage; further, to ensure an adequate record for agency review, a strict system of documented inspections was necessary. While the public's participation played a critical role in identifying safety-related components that were not implemented according to quality assurance standards, that process also provided another avenue for intervenors to inject chaos into the proceeding—they could buoy the project for months or even years based on an administrative mishap as simple as incomplete paperwork, even absent an underlying safety issue.⁷³ Further, this generation of reactors obtained construction permits at a time when nuclear technology was largely underdeveloped; consequently, as the industry matured and construction progressed, changes were necessarily (and prudently) incorporated.⁷⁴ This created a predicament in which a preferable design technology could be challenged in the operating license proceeding based on failure to comply with the construction permit, notwithstanding the design's safety superiority.⁷⁵

The effect of the chaotic adjudicatory proceedings under the two-step licensing process and each of its inherent challenges discussed herein converged with several external factors to halt the ordering of new nuclear power facilities for over thirty years.⁷⁶ Next, this Note will highlight the specific defects of the process just outlined, defects which Congress and the regulators intended to cure with the new licensing scheme.

B. What Went Wrong? The Defects of the Two-Step Licensing Process

To comprehend the problems of the bifurcated licensing process, imagine the situation facing the project manager of a utility company building a nuclear power facility under the Part 50 regulations, going before the board of directors to discuss the company's pending operating license application. It is the eleventh hour in this two-step process; billions of

73. See, e.g., Vance L. Sailor, *The Role of the Lloyd Harbor Study Group in the Shoreham Hearings—An Assessment*, 28 BULL. OF THE ATOMIC SCIENTISTS 25, 25 (1972) (concluding that an opposition group “delayed construction . . . by at least two years,” estimating the resulting “cost to the [utility’s] customers will be in excess of \$100 million,” and suggesting that was part of the strategy to prolong the proceeding rather than a concern for safety).

74. See, e.g., GEORGE T. MAZUZAN & J. SAMUEL WALKER, *CONTROLLING THE ATOM: THE BEGINNINGS OF NUCLEAR REGULATION 1946–1962* 385 (1985) (noting that the “evolving nature of atomic technology dictated revisions in design as a reactor facility moved from its construction phase to operation”).

75. See 10 C.F.R. § 50.57(1) (2011) (requiring a construction to be completed in conformance with the construction permit).

76. See White House Office of Press Sec’y, *supra* note 1 and accompanying text (noting that new nuclear plant construction has not taken place in the United States in over three decades).

dollars have been spent; costs are escalating while the license proceeding ensues; an adverse finding might require tearing out a segment, going back to the drawing board, redesigning, and rebuilding, setting the project back even further financially and otherwise. And obtaining a license to operate is anything but a certainty. Clearly, this was not an enviable position. The projects of some hopeful vendors even met their demise at this stage—in essence, continuing the proceedings became economically unviable—and a new operating plant never became a reality.⁷⁷

The old licensing process proved unworkable for several reasons, and together these provided an impetus for the agency to promulgate the Part 52 licensing regulations.⁷⁸ First, this generation of hopeful nuclear power vendors initiated their projects relying on unproven design, creating an environment in which the risk involved in these projects was immense.⁷⁹ Every aspect of the project had a great element of unpredictability: the design might change with technological advancement, the influence of the public in different phases was difficult to gauge, unforeseeable external factors influenced costs and other aspects of a project, and critically, the agency's ultimate grant of a license to operate was anything but a certainty.⁸⁰ The new licensing scheme aims to capitalize on technological advances⁸⁰ that allow for reliable standardization, which in turn will provide the foundation for simplifying the management on the industry side and quality assurance monitoring on the regulatory side, all of which will facilitate safer and more efficient development of nuclear power plants.⁸¹

Second and closely related to unproven design, safety issues were not fully resolved when the agency gave the approval to commence construction.⁸² As was the case with most aspects of building, the safety design took place throughout the construction phase, and assurance that safety issues were adequately dealt with was not available until the NRC

77. See Nuclear Regulatory Comm'n, *supra* note 17 and accompanying text (noting the fate of the Shoreham and Zimmer plants, which, with hundreds of millions of dollars of sunken costs, decided to terminate their projects because pursuing it further had become economically unviable).

78. See *Backgrounder on Nuclear Power Plant Licensing Process*, *supra* note 35 ("In an effort to improve regulatory efficiency and add greater predictability to the process, in 1989 the NRC established alternative licensing processes in 10 CFR Part 52 that included a combined license.").

79. See Carl, *supra* note 58 and accompanying text (noting the lack of design at the construction permit application stage).

80. See Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors, 54 Fed. Reg. 15,372, 15,372 (Apr. 18, 1989) (noting the agency's goals of safety and reliability that could come from utilizing standard designs, which themselves have been made possible by advances in nuclear technology).

81. See *id.* (noting that the agency's rulemaking was in part driven by attaining standardization and the enhanced safety that would be enabled by such standardization).

82. See Carl, *supra* note 58 and accompanying text (noting that a facility's design was typically only a concept when a licensee commenced construction).

completed its review and granted an operating license. This further contributed to the unpredictable nature of the project and made real the possibility that the agency would deny an application for an operating license based on design or similar issues.⁸³ The Part 52 regulations aim to resolve all safety and environmental issues before construction begins, thus reducing the immense risk and providing some level of certainty before enormous capital commitments are expended.⁸⁴

Third, public participation under the old regulations was untimely and chaotic. Further, the regulations had the unintended consequence of allowing petitioners to use the process as a tactic against licensees.⁸⁵ The new regulations contemplate mechanisms for timely, meaningful participation; yet, they limit the ability of opponents of nuclear power generation to use the process as a weapon for stalling the proceedings and forcing vendors to contribute resources to litigating frivolous issues.⁸⁶

Each of these defects significantly contributed to the great inefficiencies inherent in developing a nuclear power plant under the old regime. Agency disapproval at the operating license review stage sent applicants back to try again until they got it right.⁸⁷ This regulatory flaw eventually contributed to an environment in which projects became economically unfeasible.⁸⁸ The NRC, while acknowledging that its role was not that of an economic regulator, took the lessons of history and recognized that the viability of new nuclear development depended on the

83. See Nuclear Regulatory Comm'n, *supra* note 17 (referring to the nuclear facilities that encountered debilitating setbacks at the operating license stage). Note that the agency did not outright deny an operating license in these proceedings; rather, repeated, adverse findings contributed to escalating costs which eventually led to a business decision that the projects were economically unfeasible.

84. See Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors, 54 Fed. Reg. 15,372, 15,373 (Apr. 18, 1989) ("The Commission's intent with this rulemaking is only to have a sensible and stable procedural framework in place for the consideration of future designs, and to make it possible to resolve safety and environmental issues before plants are built, rather than after.").

85. See *supra* Part II.A (describing how the timing and liberal grant of public participation brought about chaotic licensing proceedings).

86. See, e.g., Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors, 54 Fed. Reg. 15,372, 15,373 (Apr. 18, 1989) (noting that the agency's goal is to create a stable licensing framework, not to keep the general public out of the process); see also *infra*, note 148 and accompanying text (noting additional protections in the form of legislative enactments that address this problem, particularly the "Standby Support" Provision).

87. See 10 C.F.R. § 50.57 (2011) (noting the requirements that must be met before the agency's issue of an operating license, implying that no license would be granted until the applicant met each of those requirements).

88. See Pierce, *supra* note 25 at 498–99 (discussing "mistakes in retrospect" among the fleet of reactors initiated in the 1970s whereby economics precluded projects from moving forward and some were even abandoned or cancelled after billions of dollars were spent).

creation of a proper incentive structure that would provide licensees with regulatory stability.⁸⁹ Next, this Note will turn to the product of that undertaking.

C. The Next Generation of Nuclear Power Plants in America: The New Licensing Framework

In 1989, the NRC established new alternatives for nuclear plant licensing that are set forth in 10 C.F.R. Part 52.⁹⁰ Part 52 describes a three-part process in which a hopeful vendor may submit one application that combines each of these three parts:⁹¹ an early site permit,⁹² standard design certification,⁹³ and a combined construction and operating license.⁹⁴ The combined license provides for a one-step process with a mandatory hearing that aims to proceed more smoothly than hearings of the prior generation, while continuing to give the public adequate opportunity to participate.⁹⁵

1. Basics of the Part 52 Licensing Regulations with a Focus on the Novel ITAAC Provisions

In order to avoid the problems inherent in the old process whereby safety and environmental concerns remained after the issuance of a construction permit,⁹⁶ Part 52 allows an early site permit (“ESP”) application to be filed, in which a vendor requests Commission approval of

89. See, e.g., Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors, 54 Fed. Reg. 15,372, 15,376 (Apr. 18, 1989) (noting the sought-after regulatory stability that could eventually support standardization and the benefits that would come with that).

90. See Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors, 54 Fed. Reg. 15,386 (Apr. 18, 1989) (codified at 10 C.F.R. pt. 52) (setting forth a new part of the regulations specifying review procedures and licensing applications for these new licenses and certifications).

91. See 10 C.F.R. § 52.8 (2010) (“An applicant for a license under this part may combine in its application several applications for different kinds of licenses . . . [and] may incorporate by reference in its application information contained in previous applications, statements, or reports filed with the Commission.”).

92. See *id.* at Subpart A (setting forth the requirements for submitting an application for an Early Site Permit).

93. See *id.* at Subpart B (setting forth the requirements for submitting an application for standard Design Certifications).

94. See *id.* at Subpart C (setting forth the requirements for submitting an application for combined licenses).

95. See *id.* at pt. 2, Subpart L (setting forth the informal hearing procedures for NRC adjudications).

96. See *supra* Part II.B at notes 82–84 (discussing the problems arising when a construction permit was issued prior to complete resolution of safety and environmental issues).

the plant site itself.⁹⁷ An early site permit resolves site safety, environmental protection, and emergency preparedness issues, and the review takes place exclusive of the specifics of actual reactor design.⁹⁸ Both prior to application and during NRC staff review, the NRC will generally hold several meetings with the applicant that are open to the public in order to provide the general public with access to information regarding the safety and environmental aspects of the proposed project.⁹⁹ The Commission will hold a mandatory public hearing on the Early Site Permit once the ACRS and NRC staffs have each completed their respective safety reviews. However, unlike contentions under the old regulatory regime, a stricter pleading standard must be met before the agency will admit contentions in the mandatory hearing: “The presiding officer shall not admit contentions proffered by any party concerning an assessment of the benefits of construction and operation of the reactor or reactors, or an analysis of alternative energy sources if those issues were not addressed by the applicant in the early site permit application.”¹⁰⁰

The ESP might be accompanied by an extremely useful regulatory mechanism known as the limited work authorization (“LWA”), which allows hopeful vendors to begin limited work at a site while a license or

97. See 10 C.F.R. § 52.12 (2010) (describing the scope of the early site permit provisions).

98. See *id.* § 52.17 (setting forth the technical information required in an application for an early site permit, specifically, a site safety analysis report and a complete environmental report, which include emergency plans and the proposed ITAAC related to the proposed site of the facility); see also *Backgrounder on Nuclear Power Plant Licensing Process*, *supra* note 35 (listing the ESP application requirements). The early site permit should include the following:

[S]ite boundaries; seismic, meteorologic, hydrolic, and geologic data; location and description of any industrial, military, or transportation facilities and routes; existing and projected future population of the surrounding area; evaluation of alternative sites; proposed general location of each plant planned to be on the site; number, type[,] and power level of the plants planned for the site; maximum discharges from the plant; type of plant cooling system to be used; radiation dose consequences of hypothetical accidents; and plans for coping with emergencies.

Id.

99. See Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors, 54 Fed. Reg. 15,372, 15,374 (April 18, 1989) (noting that contrary to some allegations that the agency was attempting to remove the public from the process, the NRC was moving the bulk of the direct public involvement to the front end of a project).

100. 10 C.F.R. § 52.21 (2010). Compare *id.* (disallowing explicitly contentions that suggest alternative energy sources), with *Houston Lighting and Power Co.*, ALAB-590, 11 N.R.C. at 545 (interpreting the Part 2 and Part 50 regulations to allow a contention that suggested a marine biomass farm as an alternative to a nuclear power generation facility).

permit application is under agency review.¹⁰¹ This authorizes performance of non-safety site preparation activities to be carried on while the application is under review, at the risk of the applicant.¹⁰²

In another effort to avoid the uncertainties regarding design that inundated the entire process under the two-step regime, the Part 52 regulations set forth the process for obtaining an agency-issued grant of a standard design certification,¹⁰³ which, if granted, is valid for fifteen years.¹⁰⁴ These provisions provide a means for simplifying the process and approving a standard design (independent of any site) that may later be incorporated into a combined license.¹⁰⁵ The agency certifies a standard design via a rulemaking process in which notice and an opportunity for public comment are required.¹⁰⁶ If certification is granted, the standard design will be published in an appendix to the new licensing regulations.¹⁰⁷

A novel addition to the Part 52 regulations is a requirement of each application for a standard design certification:

[It] must . . . contain . . . [t]he inspections, tests, analyses, and acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a facility that incorporates the design certification has been constructed and will be operated in conformity with the design certification provisions[.]¹⁰⁸

101. See 10 C.F.R. § 52.21 (2010) (citing 10 C.F.R. § 50.10 (2010)) (authorizing applicants to “perform the driving of piles, subsurface preparation, placement of backfill, concrete, or permanent retaining walls within an excavation, installation of the foundation . . . any of which are for [safety-related structures, systems, or components] of the facility”). Note that this section cross-references the Part 50 regulations. This regulatory vehicle was available under the old process as well.

102. See *id.* § 50.10(f) (“Any activities undertaken under a [LWA] are entirely at the risk of the applicant, and . . . the issuance of the [LWA] has no bearing on the issuance of a construction permit or combined license with respect to the requirements of the Act, and rules, regulations, or orders issued [thereunder].”).

103. See *id.* § 52.41 (noting that the provisions set forth the requirements and procedures for obtaining a standard design certification exclusive of a construction permit under Part 50 or a combined license under Part 52).

104. See *id.* § 52.55(a) (“[A] standard design certification issued under this subpart is valid for [fifteen] years from the date of issuance.”).

105. See *id.* § 52.43 (noting that a combined operating license may incorporate a standard design by reference to the standard design certification).

106. See *id.* § 52.143 (stating that the NRC staff will make and publish a determination of acceptability of a standard design after completion of its review and receipt of a report by the ACRS). *But see id.* § 52.51(b) (noting that the Commission, in its discretion, may hold a legislative-type hearing in a standard design certification review proceeding).

107. *Cf. id.* § 52.145 (noting that the approved standard designs will be used and relied upon in future applications for licenses that incorporate a design by reference).

108. *Id.* § 52.47(b)(1).

This provision sets forth one of the more innovative aspects of the new licensing process, commonly referred to as the ITAAC review process.¹⁰⁹

The third component part of the new regulatory scheme is the combined construction and operating license (“COL”). A COL is an effort to resolve the defects inherent in the bifurcated process by allowing an applicant to incorporate by reference a preapproved standard reactor design and site in its license application, which if granted is both a construction license and a (conditional) operating license.¹¹⁰ Where uncertainty plagued the two-step process, this mechanism of combining three parts into one step is an effort to reduce the risk placed on the vendor by resolving issues on the front end (before construction even begins and substantial financial investment made).¹¹¹

With the goal of enhancing efficiency and predictability, a COL application allows an applicant to incorporate by reference an early site permit and a design certification, essentially addressing all three parts in one combined step.¹¹² The COL application itself requires much of the same information required under the two-step process.¹¹³

The mandatory hearing prior to the issuance of a construction permit under the old Part 50 regulations remains in the new process at the COL application stage.¹¹⁴ However, the mandatory proceeding under a Part 52 COL hearing proceeds in a vastly different manner from the construction permit hearings of the previous generation of nuclear facilities, due in large part to significant administrative changes promulgated by the NRC in another effort to provide a more efficient licensing scheme.¹¹⁵ In 2004, the

109. See *infra* Part III.A (providing a detailed discussion on the ITAAC review process). Note that this regulatory innovation is not exclusive to the Design Certification application. While the majority of ITAAC relate to design, the ESP and COL will each contain ITAAC.

110. See 10 C.F.R. § 52.73 (2011) (noting the applicant’s opportunity to reference an ESP or a Standard Design in its COL application); *id.* at § 52.8 (noting that applicants may combine in order to avoid taking repetitive steps).

111. See, e.g., Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Reactors, 54 Fed. Reg. 15,372, 15,376 (Apr. 18, 1989) (noting the predictability fostered by the new licensing scheme).

112. E.g., Licenses, Certifications, and Approvals for Nuclear Power Plants, 72 Fed. Reg. 49,352, 49,368 (Aug. 28, 2007) (noting the efficiency advantages of early resolution and finality of issues).

113. Compare 10 C.F.R. § 52.79 (2011) (setting forth the technical specifications required under the new licensing process), with *id.* § 50.34 (setting forth the technical specifications required under the old licensing process).

114. See Atomic Energy Act of 1954, 42 U.S.C. § 2239(a)(1)(A) (setting forth the mandatory hearing requirement for commercial nuclear power generation licenses); see also 10 C.F.R. § 52.85 (2011) (setting forth the location of the procedural regulations to be applied in the mandatory hearing proceedings).

115. See Changes to Adjudicatory Process, 69 Fed. Reg. 2,182, 2,182 (Jan. 14, 2004) (“The [NRC] is amending its regulations . . . to make the NRC’s hearing process more effective and efficient.”). The NRC continued: “The final rule will fashion hearing

NRC published a final rule in which reactor licensing hearings were to be conducted in a less trial-type manner (pursuant to Subpart L) than those required under the old protocol.¹¹⁶ Under the new process, in addition to granting parties to a proceeding fewer discovery and cross examination rights, the agency raised the bar for hopeful intervenors to gain standing and submit contentions.¹¹⁷ In stark contrast to the Atomic Safety and Licensing Appeal Board's liberal Allens Creek decision under the old process discussed in Part II.A,¹¹⁸ the ASLB is taking a much harder line in interpreting the standards for intervening and submitting contentions in the mandatory informal hearings under Part 52: "[O]ur contention admissibility 'requirements are deliberately strict, and we will reject any contention that does not satisfy' them."¹¹⁹ While potential intervenors undoubtedly face a higher standard for participating in a Part 52 combined license mandatory hearing, the new informal procedures have been judicially challenged and upheld as consistent with the requirements of the Administrative Procedure Act,¹²⁰ albeit with some hesitation.¹²¹

In addition to the revamped mandatory hearing process, an application for a COL must also contain ITAAC.¹²² The closure of each

procedures that are tailored to the differing types of licensing and regulatory activities . . . and will better focus the limited resources of involved parties and the NRC." *Id.*

116. *See id.* (setting forth more efficient hearing procedures for nuclear reactor licensing proceedings). *Compare* 10 C.F.R. pt. 2, subpart L (2010) (setting forth a streamlined hearing process characterized by a system of mandatory disclosure, *see id.* at § 2.336, restricted cross-examination rights, *see id.* at § 2.1204, and interrogation by the presiding officer rather than the litigants, *see id.* at § 2.1207), *with* 10 C.F.R. pt. 2 subpart G (1980) (setting forth the formal adjudicatory hearing process characterized by trial-type procedures such as full discovery and direct and cross examination by the parties to the proceeding).

117. *See* Changes to Adjudicatory Process, 69 Fed. Reg. 2,182, 2,202 (Jan. 14, 2004) ("The requirement to have specific contentions with a supporting statement of the facts alleged or expert opinion that provides the bases for them in all hearings should focus litigation on concrete issues and result in a clearer and more focused record for decision.").

118. *See supra* notes 49–53 and accompanying text (noting the appeal board's liberal interpretation of the standard for petitions for leave to intervene and the standard for submitting contentions).

119. *See* S. C. Elec. & Gas Co., Nos. 52–027, 52–028, 2010 WL 4057454, at *3 (N.R.C., Aug. 27, 2010) (affirming the 2010 ASLB decision denying the petition to intervene and submit a contention that asserted the applicants "inadequately addressed the need for power, energy alternatives, and costs and schedule for the proposed reactors").

120. *See* Administrative Procedure Act, 5 U.S.C. §§ 554, 556, 557 (2011) (setting forth the federal law governing procedure within administrative agencies).

121. *See* Citizens Awareness Network, Inc. v. United States, 391 F.3d 338, 351 (1st Cir. 2004) ("Though the Commission's new rules may approach the outer bounds of what is permissible under the APA, we find the statute sufficiently broad to accommodate them.").

122. *See* 10 C.F.R. § 52.80 (2011) (setting forth the fact that a COL application must contain ITAAC that if performed and met will demonstrate that a plant has been constructed and will operate in conformity with the COL and all relevant statutes and regulations). Recall

ITAAC will serve as the condition that a facility must meet before the agency will authorize a licensee to load fuel and operate; in other words, the closed ITAAC will provide the agency reasonable assurance that the facility conformed with the combined license in the construction process and will be operated accordingly.¹²³ A single application might contain several hundred ITAAC, and some have well over a thousand that the applicant must perform and the agency must approve.¹²⁴ After the mandatory combined license hearing, the Commission must identify all ITAAC¹²⁵ prior to granting the combined license.¹²⁶ Upon issuing a COL, the Commission may find that certain ESP and design certification ITAAC have been met. Such a finding will resolve those ITAAC with finality, and they will be deemed closed.¹²⁷

An applicant, having obtained a COL and identified the “open” ITAAC, has the green light from the agency to commence construction,¹²⁸ analogous to the position of a licensee holding a construction permit under the old process. Plant construction will likely take several years, and the ITAAC closure phase is ongoing throughout this period.¹²⁹ During this

that early site permit and design certification applications also must contain ITAAC. See *supra* note 18 for a thorough definition of ITAAC.

123. See 10 C.F.R. § 52.103(g) (2011) (setting forth the procedure for closure within the preoperational ITAAC review process).

124. See, e.g., Memorandum from Luis A. Reyes, NRC Exec. Dir. of Operations on Policy of Staff Approach to Verifying the Closure of ITAAC to the Comm’rs (Mar. 8, 2007) (on file with the author). Note that a COL incorporates the ITAAC of the early site permit and design certification. Most ITAAC are in fact defined in the design certification review process, so a significant number were identified previously and are merely incorporated by reference in a COL.

125. See 10 C.F.R. § 52.97(b) (2010) (“The Commission shall identify the . . . [ITAAC] that, if met, are necessary and sufficient to provide reasonable assurance that the facility has been constructed and will be operated in conformity with the license, the provisions of the Act, and the Commission’s rules and regulations.”).

126. See *id.* § 52.103 (noting the steps that must take place in order to obtain authorization to operate under a combined license).

127. See *id.* § 52.97(a)(2) (“[T]hose acceptance criteria have been met . . . [and] will be deemed to be excluded from the combined license, and [further findings] with respect to those acceptance criteria are unnecessary.”).

128. See, e.g., *id.* § 50.10 (noting that no person may begin construction of a facility prior to obtaining a COL); see also *id.* § 52.1 (setting forth the definition of a combined license as a “combined construction permit and operating license *with conditions* for a nuclear power facility,” which implicitly suggests the COL authorizes the licensee to begin construction (emphasis added)). Note that the conditions referred to are the ITAAC, which will become technical requirements identified by the Commission when it issues the combined license. See *supra* notes 126–27 and accompanying text (describing what happens with proposed ITAAC when the Commission issues a combined license).

129. See *id.* § 52.99(c)(1) (“The licensee shall notify the NRC that the prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria have been met. The notification must contain sufficient information to demonstrate [as much].”).

time, the licensee is to submit status updates informing the agency when prescribed inspections, tests, and analyses have been performed and that the acceptance criteria have been met (i.e., the company is responsible for seeing to it that each ITAAC is met and also for providing the agency with notice of a basis for how the closure took place sufficient for NRC review).¹³⁰ It is the duty of the agency to ensure there was in fact conformance and to publish notice of completion when appropriate.¹³¹

Under section 52.103, the licensee must notify the agency approximately nine months prior to the scheduled date for loading fuel; the agency is then required to publish a notice of intent to operate and provide that “any person whose interest may be affected by operation of the plant may . . . request a hearing on whether the facility as constructed complies, or on completion will comply, with the acceptance criteria in the combined license,” excepting ITAAC that have already been met under section 52.97(a)(2).¹³² The regulations set forth a high threshold and narrow scope for obtaining a hearing at this stage:¹³³ It must be shown that one or more of the acceptance criteria in the ITAAC have not or will not be met *and* that the consequences of such failure will result in the inability of the agency to provide reasonable assurance of the public health and safety.¹³⁴ Absent specific facts (rather than general, subjective concerns), there is no basis for intervention and no grounds for a post-construction hearing.¹³⁵ However, unlike the streamlined mandatory hearing that took place at the COL stage,¹³⁶ if the Commission grants a section 52.103(a) hearing, it has discretion to conduct it under the informal adjudicatory process of Subpart L *or* the formal adjudicatory process set forth in Subpart G.¹³⁷ A licensee

130. *See id.* § 52.99(a) (requiring licensees to submit notifications that implementation has occurred and in six month intervals during the construction phase).

131. *See id.* § 52.99(e) (setting forth the agency’s duty to inspect and notify the public).

132. *See id.* § 52.103(a) (noting the requirements that the agency provide notice and opportunity for a hearing prior to allowing operation under a combined license). This provision also requires that a party who successfully requests a hearing shall be admitted as a party to that hearing. *Id.*

133. *See* § 2.309 (explaining the procedure for hearings and petitions to intervene and the requirements for standing and contentions); *see also supra* notes 115–121 and accompanying text (setting forth the more efficient process under the new regulations, along with the heightened threshold for intervention).

134. *See* 10 C.F.R. § 52.103(b) (2011) (describing the requirements that must be shown to request and become a party to a section 52.103(a) hearing).

135. *See id.* (requiring specificity in a petition to intervene at this stage, particularly with regard the specific consequences of alleged nonconformance).

136. *See id.* § 2.310(a) (stating that combined license hearings may be conducted pursuant to the streamlined procedures set forth in Subpart L).

137. *See id.* §§ 52.103(d), 2.310(j) (noting the Commission’s discretion in choosing informal or formal adjudication if a section 52.103(a) hearing is granted). Note that all relevant hearings under the old two-step process proceeded according to the formal

cannot operate a nuclear power generation facility until the Commission makes a section 103(g) finding that all acceptance criteria in the combined license have been met, and once that finding has been made, “all ITAAC expire upon final Commission action in the proceeding.”¹³⁸

Pause to consider the position of a licensee at this stage, by way of contrast with the licensee who had just submitted an application for an operating license under the two-step process, particularly in terms of the investment spent and risk ahead.¹³⁹ Whereas the agency conducted significant quality assurance review during the operating license proceedings under the old process, that role will take place continually under the Part 52 regulations, throughout the construction phase. As the apparent analog to the high-risk, uncertain, inefficient operating license proceeding, it becomes clear that this novel and untested ITAAC review process will be the significant ground upon which the new process’s success in curing the defects of the two-step will be evaluated. While the Part 52 regulations were first published over two decades ago, this process is just now facing its defining moment.

2. *Why the Delay? The Enabling Legislation*

Before turning to an assessment of how the new process is functioning in its nascent stage, a brief discussion of the legislation supporting the new licensing scheme is warranted (in addition to the Atomic Energy Act).¹⁴⁰ The new regulations were first published in 1989; however, combined license applications under Part 52 did not start flowing into the NRC until 2007.¹⁴¹ Why the delay? Even after the NRC

adjudicatory procedures set forth in the old Subpart G, where broader discovery and cross-examination rights were recognized, among other things.

138. *See id.* § 52.103(g), (h) (declaring that a finding that all ITAAC are met is a prerequisite to operating a facility and that once that finding is official the ITAAC expire, no longer serving as regulatory requirements since the technical aspects have been met).

139. *See supra* Part II.B (setting forth the position of a hypothetical licensee at the operating license application stage under the old bifurcated regulatory scheme and detailing the defects of the Part 50 licensing regulations). Note the narrow scope that might be at issue in a hearing at this phase under Part 52, the ability to predict, and the amount of control the licensee has over abating the risk of the Commission granting a contested hearing, in comparison with an operating license hearing under Part 50.

140. *See supra* notes 19–23 and accompanying text (describing the organic statute of the Atomic Energy Commission, NRC’s predecessor).

141. *See* NUCLEAR ENERGY INST., NEW NUCLEAR PLANT STATUS, <http://www.nei.org/resourcesandstats/documentlibrary/newplants/graphicsandcharts/newnucl earplantstatus/> (last updated Jan. 2011) (displaying the NRC combined licensing applicants and relevant application information in chart form) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

implemented its efficiency-enhancing regulations,¹⁴² economic considerations continued to be an obstacle to initiating new nuclear projects.¹⁴³

The NRC had limited tools at its disposal to create an environment conducive to stimulating investment in nuclear development given that its role was not that of an economic regulator.¹⁴⁴ Recognizing the need for government support of expanding the nuclear energy industry, Congress passed the Energy Policy Act of 2005 (the “Act”).¹⁴⁵ Several provisions applicable to the nuclear industry set forth economic incentives that have been serving as the long-awaited impetus to get firms to invest in the new nuclear power industry.

First, the loan guarantee program supports innovative nuclear technology and guarantees that the Secretary of Energy will cover up to eighty percent of project cost for investment in technology that reduces carbon emissions.¹⁴⁶ Second, the production tax credit allows the Secretary of Treasury to permit a 1.8 cents per kilowatt-hour tax credit to qualified nuclear facilities that may be in effect for up to eight years once a facility begins to operate.¹⁴⁷ Third, the “Standby Support” provision allows the Secretary of Energy to enter into contracts to cover delays related to this generation’s early reactors, including delays caused by failure of the NRC to comply with inspection, review, and hearing schedules, along with

142. See *supra* note 115 (noting the 2004 amendments promulgated to streamline the hearing process).

143. See SCULLY CAPITAL, BUSINESS CASE FOR NEW NUCLEAR REACTORS 11 (Oct. 1, 2002), available at <http://www.ne.doe.gov/home/bc/ExecOverviewNERAC100102.pdf> (recognizing in 2002 that early plant capital costs are so high that government assistance might be necessary to finance nuclear projects).

144. See *The Commission*, NUCLEAR REGULATORY COMM’N (Apr. 20, 2011), <http://www.nrc.gov/about-nrc/organization/commfuncdesc.html> (last visited April 16, 2012) (“The Commission as a collegial body formulates policies, develops regulations governing nuclear reactor and nuclear material safety, issues orders to licensees, and adjudicates legal matters.”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

145. See Energy Policy Act of 2005, Pub. L. No. 109–58, 119 Stat. 595 (mostly codified as amended in scattered sections of 42 U.S.C.) [hereinafter Energy Policy Act] (setting forth Congress’ comprehensive legislative effort to address escalating energy problems); see also SCULLY CAPITAL, *supra* note 143, at 4 (noting the market context and suggesting the environmental and energy advantages of nuclear power).

146. See Energy Policy Act, *supra* note 145, §§ 1701–04 (codified at 42 U.S.C. §§ 16,511–16,514) (setting forth the Act’s loan guarantee provision for innovative energy technology).

147. See *id.* § 1306 (codified at 26 U.S.C. § 45J) (setting forth the tax credit for production from advanced nuclear power facilities). Note that to be eligible for this tax credit, the COL must have been submitted prior to 2009, the plant must be under construction by 2014, and it must be operating by 2021. *Id.*

litigation delays.¹⁴⁸ These provisions, among others, comprise the enabling legislation that has set this nuclear renaissance in motion. Next, this Note will provide observations of the new licensing scheme in its infancy.

3. The Test Case: Plant Vogtle

The scene at Southern Company's Vogtle site in eastern Georgia is a sight to behold: Steam billows from Vogtle Units 1 and 2 in the background on the 3,100-acre site along the Savannah River, where the sound of heavy machinery is in the air and nearly two thousand contractors and other employees are working—at desks in trailers and in bulldozers that move dirt around two massive holes (each the size of five football fields) in an area that has been cleared and excavated pursuant to the limited work authorization filed in conjunction with the ESP application.¹⁴⁹ This is all in preparation for the construction of Plant Vogtle's anticipated third and fourth nuclear reactors, which may begin once the NRC issues what many expect to be the very first Part 52 combined construction and operating license.¹⁵⁰ Southern Company expects to receive approval of their combined license later this year.¹⁵¹

With Vogtle leading the way, the new licensing scheme seems to be functioning smoothly so far: Southern Company was able to obtain an early site permit and limited work authorization and to incorporate by reference

148. See *id.* § 638 (codified at 42 U.S.C. § 16041) (setting forth the Act's Standby Support provision for certain nuclear plant delays). This provision provides that the Department of Energy will pay 100% of covered costs for the first two reactors that have received a combined license under Part 52 and for which construction has begun. It will provide 50% coverage for the next four reactors that meet the same requirements.

149. See *supra* notes 101–102 and accompanying text (discussing the regulatory vehicle known as the limited work authorization); see also Southern Nuclear Operating Company's Vogtle Electric Generating Plant ESP Site, *Early Site Permit and Limited Work Authorization*, No. 52–011, ESP–004 (Aug. 26, 2009), available at <http://pbadupws.nrc.gov/docs/ML0922/ML092290157.pdf> (setting forth the details of the ESP and LWA for Southern Company's Vogtle site, including accompanying ITAAC in Appendix E).

150. See Pavey, *supra* note 29 (“Although site preparation is under way for the \$14.5 billion project, work on the reactors cannot begin until the U.S. Nuclear Regulatory Commission issues the combined license authorizing both the construction and operation of the units.”).

151. See *Milestones*, SOUTHERN COMPANY, <http://www.southerncompany.com/nuclearenergy/milestones.aspx> (last visited Nov. 15, 2011) (setting forth the timeline of the Vogtle project thus far, along with anticipated milestones) (on file with the Journal of Energy, Climate, and the Environment). Author's note: Approval of the COL was granted on February 9, 2012, allowing full construction to commence. See Press Release, Southern Company, Southern Company Subsidiary Receives Historic License Approval for New Vogtle Units, Full Construction Set to Begin (Feb. 9, 2012), available at http://www.southerncompany.com/nuclearenergy/presskit/docs/COL_press_release.pdf.

applications for the Vogtle ESP and an amendment to a standard design certification within its COL application, all within a three year span.¹⁵² Southern Company also secured a conditional \$8.3 million loan guarantee for the Vogtle units pursuant to the loan guarantee program set forth in the Energy Policy Act.¹⁵³

In addition to the apparent functioning from industry's perspective, it seems the regulatory framework is providing adequate opportunity for public participation at this stage, despite the expressed hard line regarding interventions and contentions.¹⁵⁴ Consider the Vogtle COL proceeding in which several joint petitioners sought to intervene, relying on three separate contentions.¹⁵⁵ After granting standing to the joint petitioners,¹⁵⁶ the ASLB rejected two of the three contentions for failure to meet the pleading requirements¹⁵⁷ and admitted the third as a contention of omission.¹⁵⁸ This ruling suggests two things—first, the public still appears to have a legally sufficient opportunity to participate in these proceedings, and second, this is so despite the board's strict construction of the procedural rules, unlike the ASLB in the 1970s and 1980s that essentially interpreted the Part 2 intervention procedures out of the rule.¹⁵⁹

Even so, the new licensing scheme is about to be put to the test. Currently, the NRC has issued four early site permits and has two other

152. *See id.* (noting the ESP was filed in August 2006 and granted in August 2009, with all other events transpiring in the interim).

153. *See, e.g.,* Peter Behr, *DOE Delivers Its First, Long-Awaited Nuclear Loan Guarantee*, N.Y. TIMES (Feb. 17, 2010), available at <http://www.nytimes.com/cwire/2010/02/17/17climatewire-doe-delivers-its-first-long-awaited-nuclear-71731.html?pagewanted=all> (announcing the first loan guarantee obtained by Southern Company for its Vogtle units).

154. *See supra* note 120 and accompanying text (discussing the agency's heightened threshold for granting petitions to intervene in the informal adjudicatory process).

155. *See* S. Nuclear Operating Co., 69 N.R.C. 139, 167, 2009 WL 3812209 (2009) (holding that the joint petitioners established standing to intervene and put forth one sufficient contention to grant them party status in the proceeding).

156. *See id.* at 150–51 (granting standing to each individual petitioners that filed the joint petition to intervene).

157. *See id.* at 155 (finding the contentions related to the Westinghouse design revisions “*inadmissible* in that these contentions and their foundational support [have] failed to proffer a specific, sufficiently supported, material issue regarding a safety concern associated with the interaction between the pending [design revisions and the COL application]”).

158. *See id.* at 160 (holding that the safety contention is “admitted in that this contention and its foundational support are sufficient to establish a genuine material dispute adequate to warrant further inquiry”).

159. *See supra* notes 119–121 and accompanying text (noting the ASLB's interpretation of the procedural rules under Part 52 proceedings thus far); *see also* N. States Power Co., 68 N.R.C. 905, 912 (2008) (granting the petition for intervention but only after a strict reading of the procedural requirements required to intervene and a supplemental affidavit submitted by petitioners to satisfy the procedural requirements).

applications under review;¹⁶⁰ it has issued four design certifications and has six others under review (including one renewal application);¹⁶¹ and it has eighteen applications for a combined license covering a total of twenty-seven reactors under agency review.¹⁶² While Southern Company's Vogtle units are predicted to lead the way, other applicants are moving forward as well.¹⁶³ All of this activity begs the question, Will the Part 52 regulations provide adequate public participation and a sufficiently stable framework to carry this fleet forward? Next, this Note discusses the problems that must be addressed to ensure this generation of nuclear facilities will avoid the fate of the precedent fleet, in which, for example, the Shoreham project went under even before reaching the fuel loading stage.¹⁶⁴

III. Weathering the Storm: Challenges Facing the New Fleet of Reactors

The quality assurance review that largely took place during the Part 50 operating license proceeding will substantially occur in the pre-operational ITAAC review process of the new licensing scheme. A hopeful licensee includes all necessary ITAAC in each application submitted to the NRC staff, which in turn will define the ITAAC in the combined license, either for the first time or by way of reference to ITAAC in the early site

160. See *Early Site Permit Applications for New Reactors*, NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/reactors/new-reactors/esp.html> (last visited Nov. 17, 2011) (listing the Vogtle, Clinton, Grand Gulf, and North Anna as approved sites and the Victoria and PSEG sites as under review) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

161. See *Design Certification Applications for New Reactors*, NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/reactors/new-reactors/design-cert.html> (last visited Nov. 17, 2011) (listing the ABWR, System 80+, AP600, and AP1000 as approved design certifications and several other designs as currently under review) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

162. See *Combined License Applications for New Reactors*, NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/reactors/new-reactors/col.html> (last visited Nov. 17, 2011) (listing the reactors having pending COL applications currently before the NRC, along with the Calloway Plant, for which application review was suspended in June 2009) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). These reactors are Bell Bend, Bellefonte (2), Calvert Cliffs, Comanche Peak (2), Fermi, Grand Gulf, Levy County (2), Nine Mile Point, North Anna, River Bend Station, Shearon Harris (2), South Texas (2), Turkey Point (2), Victoria County Station (2), Virgil C. Summer (2), Vogtle (2), and William States Lee III (2). *Id.*

163. See, e.g., S.C. Elec. & Gas Co., [CLI-10-21] (denying remaining portion of intervention petition and terminating the contested portion of the Virgil C. Summer COL proceeding). Note that the COL application for this nuclear power facility did not utilize the limited work authorization, nor did it incorporate by reference an early site permit, by way of contrast with the manner Southern Company proceeded under Part 52 for its Vogtle plant.

164. See *supra* note 17 and accompanying text (describing the final projects that went under in the context of the two-step licensing process).

permit and standard design certification.¹⁶⁵ Section 52.1 defines a combined license as “a combined construction permit and operating license *with conditions* for a nuclear power facility”¹⁶⁶ The license is conditioned upon a licensee performing the hundreds or even thousands of pre-defined¹⁶⁷ inspections, tests, and analyses and an agency finding that the licensee has in fact met all pre-defined acceptance criteria, which together will provide the basis for the agency’s determination that it does or does not have reasonable assurance the plant will be safely operated in conformance with the COL.¹⁶⁸ From the moment construction begins, each licensee will have the blueprint for exactly what it must do to obtain agency approval to begin operating, as described in each individual ITAAC. The efficiency and predictability advantages seem obvious when compared to the two-step process in which construction permit holders designed as they built (with no comparable blueprint to guide them) and were subject to a quality assurance evaluation with near unlimited scope and somewhat unpredictable evaluation criteria in the operating license proceedings.¹⁶⁹ Prior to gaining approval to operate under Part 52, the public has an opportunity to request a hearing; however, the regulations define the scope of these proceedings very narrowly and require a showing that specific ITAAC have not and will not be met *and* that such failure precludes a finding that there is reasonable assurance of the public health and safety.¹⁷⁰ On its face, it might appear the regulatory scheme provides for a seamless process that will provide stability for this nuclear renaissance to charge forward.

However, two significant and interlocking issues stand in the way. First, the ITAAC closure process and maintenance period (likely to span several years) proceed without public participation until the section 103(a) hearing opportunity presents itself toward the very end of the construction phase.¹⁷¹ Under certain factual circumstances, the text of the provision

165. See *supra* note 18 and accompanying text (describing the how the ITAAC are defined in the combined construction and operating license).

166. 10 C.F.R. § 52.1 (2011) (emphasis added).

167. These ITAAC are pre-defined in the COL.

168. See *supra* note 123 and accompanying text (noting that the closed ITAAC provide the NRC staff with the basis for a finding of reasonable assurance that a nuclear facility will be operated safely and in accordance with the license).

169. See *supra* note 73 and accompanying text (noting the uncertainty of design at this stage of the process under Part 50).

170. See *supra* notes 134–35 and accompanying text (setting forth the two *strict prima facie* requirements that are necessary for the agency to grant a request for a section 103(a) hearing).

171. See 10 C.F.R. § 52.99 (2011) (describing the ITAAC closure process, which consists of detailed reporting on the part of licensees to provide a sufficient basis to ensure the agency that the ITAAC have been met, but which does not provide for public participation aside from the agency’s duty to publish notices of the closed ITAAC).

setting forth the pre-operational ITAAC hearing is internally contradictory and legally impermissible on two separate grounds, discussed in Part III.A. Further, the regulations do not conclusively settle what precise procedures will be used in these section 103(a) ITAAC review hearings,¹⁷² leaving open the question of whether or not these proceedings will be legally permissible under the Administrative Procedure Act.¹⁷³

Second, while design standardization has significantly improved, these projects will last several years, and during this time design and other changes will be inevitable.¹⁷⁴ While the regulations provide a mechanism for altering a site characteristic or design parameter that does not trigger significant procedural requirements, this is only available if the variance is granted *prior* to the issuance of a combined license.¹⁷⁵ Once a COL is issued, any change requires an amendment, which triggers a hearing opportunity.¹⁷⁶ With the hearing opportunity that arises with each amendment, this tranche of reactors is facing an effective reversion to the hearing delays and cost-escalation problems that characterized the two-step process. And activity under Part 52 thus far suggests that amendments will in fact be sought: Westinghouse, the company that designed one of the four standard design certifications issued to date by the NRC, currently has its amended AP1000 reactor design under agency review and submitted its *eighteenth* revision to that amendment late last year.¹⁷⁷ Even though the interplay that will occur between these issues will be significant, for

172. See *id.* § 52.103(e), (f), (g) (referring generally to the “Commission” in setting forth the section 103(a) hearing procedures and leaving the decision of whether to choose a formal or informal adjudicatory hearing procedure at the discretion of the “Commission”).

173. See, e.g., Attorney General’s Manual on the Administrative Procedure Act § 4 (1947) (prepared by the United States Department of Justice Tom Clark, Attorney General) (noting the requirements set forth in section 5(b) for a certain level of public participation for interested parties in all administrative adjudicatory proceedings).

174. These design and other changes will also have implications in the ITAAC review process, as any alteration will likely require a change to the blueprint, the predefined ITAAC set forth in the COL, hence the interlocking nature of these two issues.

175. See 10 C.F.R. § 52.93(c) (2011) (allowing an applicant to seek a variance to which the Commission will apply the same criteria as if it had been in the original application so long as the variance is obtained prior to the issuance of a combined license).

176. See *id.* § 52.98(f) (“Any modification to, addition to, or deletion from the terms and conditions of a combined license, including any modification to, addition to, or deletion from the [ITAAC] contained in the license is a proposed amendment to the license. There *must* be an opportunity for a hearing on the amendment.” (emphases added)).

177. See Robynne Boyd, *Safety Concerns Delay Approval of the First U.S. Nuclear Reactor in Decades*, SCI. AM., July 29, 2010 (noting that the amendment to the AP1000 reactor design was on its eighteenth revision); see also *Design Certification Application Review*, NUCLEAR REGULATORY COMM’N, <http://www.nrc.gov/reactors/new-reactors/design-cert/amended-ap1000.html> (last visited Oct. 18, 2011) (stating that Westinghouse submitted its eighteenth revision to the NRC on December 1, 2010) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

discussion purposes, this Note addresses the issues associated with the ITAAC review process and amendments in turn.

A. Public Participation in the ITAAC Process: Definition, Implementation, and Closeout

While ITAAC are defined (and redefined) throughout the early site permit, design certification, and combined license application proceedings (and beyond), the period in which the agency may begin to issue findings that ITAAC have been met (the “closeout” phase) does not begin until the combined license is issued.¹⁷⁸ As a result, the manner in which ITAAC closeout will function in reality remains to be determined since the agency has not yet issued a COL; however, that phase is imminent, as the agency grant of the COL in connection with Southern Company’s Vogtle Units 3 and 4 is predicted to take place later this year.¹⁷⁹ Essentially, the closeout phase will be finalized with the agency’s section 103(g) finding and subsequent termination of the proceeding, which will serve as the final regulatory step before loading fuel under Part 52.¹⁸⁰ This step is analogous to the issuance of an operating license under the bifurcated licensing scheme and similarly serves as the last step to ensure reasonable assurance that the operating plant will not endanger the public’s health and safety.¹⁸¹ In short, the stakes of getting the pre-operational ITAAC review process right are high.

Consider the lifespan of a single hypothetical ITAAC contained in an early site permit:¹⁸² First, the *applicant* must set forth the proposed ITAAC in its application;¹⁸³ at the conclusion of the proceeding the agency

178. See 10 C.F.R. § 52.97(a)(2) (2011) (setting forth the first time the NRC may issue a finding regarding ITAAC, which is when it issues a combined license, at which time it may close ITAAC related to an early site permit or a standard design certification that was referenced in the COL application). The agency may close the ITAAC if the closure is warranted. *Id.*

179. See, e.g., James M. Hylko, *Plant Vogtle Leads the Next Nuclear Generation*, POWER MAG., Nov. 1, 2009, at 2, available at http://www.powermag.com/issues/features/Plant-Vogtle-Leads-the-Next-Nuclear-Generation_2247_p2.html (“The NRC has scheduled completion of the Vogtle final safety evaluation report in April 2011. Southern Nuclear expects to receive its COL later in 2011 and then immediately begin safety-related construction.”).

180. See 10 C.F.R. § 52.103(g) (2011) (stating that a facility shall not operate until a finding under this section is made, implying that this is the final step before loading fuel).

181. See *id.* § 50.57 (providing agency authorization for a facility to begin operating upon issuance of a license under this subsection).

182. Assume for the purposes of this hypothetical that the early site permit will be granted and later incorporated by reference into the applicant’s combined license, which will also be granted.

183. See 10 C.F.R. § 52.17(b)(3) (2011) (“Emergency plans submitted under . . . this section *must* include the proposed [ITAAC].”).

will issue an early site permit if it finds the *applicant's* proposed ITAAC is necessary and sufficient to ensure reasonable assurance of conformance with the ESP (and thus public health and safety);¹⁸⁴ with the defined ITAAC serving as an applicant's blueprint for that particular component, the *applicant* will be responsible for implementing it as prescribed and then reporting as much to the agency "with sufficient information to demonstrate that the [ITAAC has] been met;"¹⁸⁵ with this information the *agency* has the duty to ensure proper implementation¹⁸⁶ and to make a finding that the acceptance criteria has been met;¹⁸⁷ finally, the *agency* will close the ITAAC upon a section 103(g) finding and final commission action in the proceeding, at which point the ITAAC will expire.¹⁸⁸

To date, it appears the new regulatory scheme provides adequate, albeit more limited, opportunity for public participation through the combined license proceeding stage (that is, the procedures are in conformance with the APA).¹⁸⁹ But what about the pre-operational ITAAC review process? In the hypothetical set forth above, an opportunity to request a hearing is only available at two junctures.¹⁹⁰ First, it is available during the definitional phase (which is finalized upon issuance of an early site permit, standard design certification, or combined license depending on the ITAAC),¹⁹¹ and second, during the closure phase, which consists of a final finding that the ITAAC has been met and takes place either upon

184. *See id.* § 52.24(a)(5) (noting that agency approval of the applicant's proposed ITAAC is necessary for the issuance of an early site permit).

185. *Id.* § 52.99(c)(1).

186. *See id.* § 52.99(e) ("The NRC shall ensure that the prescribed inspections, tests, and analyses in the ITAAC are performed.").

187. *See id.* § 52.103(g) (noting the Commission finding (a "section 103(g) finding") that the ITAAC has been met is a prerequisite to operating a facility).

188. *See id.* § 52.103(g), (h) (describing how an official agency finding that the ITAAC has been met causes the ITAAC to expire, which means it no longer constitutes a regulatory requirement for licensees while operating or seeking license renewal). Note that this finding may also take place when the agency issues a COL, and such a finding has a similar effect, in that the ITAAC expires and essentially no longer exists. *Id.* § 52.97(a)(2).

189. *See supra* notes 154–55 and accompanying text (describing the apparent adequate opportunity for public participation under Part 52 thus far, at this admittedly early stage); *see also supra* notes 120–21 and accompanying text (noting judicial approval of the new administrative procedures in response to an APA challenge).

190. For explanatory purposes, this hypothetical does not account for the possibility of amendments, which will also trigger an opportunity to request a hearing. In reality, these issues will be intertwined. This Note discusses amendments separately in Part III.B, *supra*.

191. *See* 10 C.F.R. § 52.24(b) (noting that all terms and conditions of an early site permit, including ITAAC, have been met or will serve as conditions of a combined license and are thus defined); *see also id.* § 52.54(b) (noting that all requirements must be specified when the standard design certification is issued); *id.* § 52.97(b) (noting the same for issuance of a combined license).

issuance of a combined license¹⁹² or with a section 103(g) finding.¹⁹³ The fact that the scope of these proceedings is limited is not problematic in and of itself.¹⁹⁴ However, in current form, when certain factual circumstances present themselves the regulations become inherently contradictory and therefore violative of the policy imperative set forth in the agency's own organic statute, rendering the regulation *ultra vires*.¹⁹⁵ The hypothetical helps illustrate exactly why section 52.103 is inconsistent with the NRC's organic statute. Suppose the agency adopts the ITAAC definition proposed by the applicant when it issues the early site permit, the proceeding goes forward uncontested, the COL (referencing the early site permit including this ITAAC) has been issued, and plant construction is underway. Suppose further that a member of the public discovers that the ITAAC is materially flawed—that the performed inspections, tests, and analyses would *not* in fact provide reasonable assurance of the public health and safety, even if the acceptance criteria were met. The requirements to request a section 103(a) hearing would bar the interested party from even making such a *request*, if strictly construed: a prima facie showing that the ITAAC has not or will not be met *and* the specific, harmful operational consequences that will result is not possible under this hypothetical.¹⁹⁶ In other words, a strict application of the procedural requirements set forth in the regulations, which also state that interested parties *must* be afforded the opportunity to request a hearing, preclude a party from requesting a hearing since they cannot make a prima facie showing that the ITAAC has not and will not be met. So undiscovered safety issues, which (quite obviously) were not addressed in the (flawed) ITAAC definition phase, cannot be challenged so long as the applicant adequately performs the *defined* inspections, tests, and analyses, meets the *defined* acceptance criteria, and the agency finds conformance therewith.¹⁹⁷

192. See *id.* § 52.97(a)(2) (describing the process for closing ITAAC when the COL issues, which similarly “will finally resolve that those [ITAAC] have been met, [and] those acceptance criteria will be deemed to be excluded from the combined license” and further findings with respect to those ITAAC are unnecessary).

193. See *supra* notes 188, 192, and accompanying text (describing when official ITAAC closure and expiration takes place).

194. See *supra* notes 119–121 (noting the strict admissibility requirements set forth in the regulations and the Atomic Safety and Licensing Board's strict interpretation of those requirements). This statement is speculative to a degree; however, if the ASLB is consistent in its procedural interpretation, these later hearings will be subject to the same strict scrutiny that has been *consistently* applied in the proceedings to date.

195. See Atomic Energy Act of 1954, 42 U.S.C. § 2011 (2011) (setting forth Congress's intent in passing the Act, notably its goal that the use of nuclear power be directed at improving the general welfare).

196. See *supra* note 134 and accompanying text (setting forth the standards required for requesting a hearing).

197. See 10 C.F.R. § 52.103(g) (2011) (stating that a closure for a specific ITAAC requires only a finding that the pre-defined acceptance criteria have been met).

In the event that an attentive member of the public uncovers a materially flawed ITAAC definition phase, the regulation's procedural structure precludes the interested party from exercising the right to request a hearing granted explicitly in section 103(a) by the procedural requirements in section 103(b). Sections 103(a) and (b) are inherently contradictory under a certain, probable fact pattern (as was the case in the hypothetical just described).¹⁹⁸ Taking the hypothetical one step further, suppose the materially flawed ITAAC, if uncorrected, might cause substantial safety hazards to the community surrounding a generation facility. Under these circumstances, the regulatory procedures are legally impermissible in at least two ways. First, a strict interpretation of section 103(b) will lead the agency to authorize plant operation when operation will cause significant and detrimental health and safety consequences that will be harmful to the general welfare in violation of the agency's organic statute.¹⁹⁹

Second, the current regulation is structured to accommodate due process violations against individual litigants. Agency adjudication carries with it constitutional due process hearing rights.²⁰⁰ Suppose the agency does not allow a hearing on the flawed ITAAC based on the interested party's failure to meet the *prima facie* requirements necessary to request a hearing, resulting in the termination of a proceeding and the nuclear facility going on line. The applicable due process framework was set forth by the Supreme Court in *Goldberg v. Kelly*.²⁰¹ The interested party would have a cause of action if it could show that, on balance, (1) the agency action has caused some substantial deprivation to the interested party resulting from failure to consider the materially flawed ITAAC in the proceeding, (2) the governmental interest in not allowing the hearing was minimal, and (3) the risk of erroneous deprivation of the interest involved resulting from the procedure (not) used was a near certainty and, along the same line, that

198. See *supra* notes 133–35 and accompanying text (setting forth the strict *prima facie* requirements necessary for the agency to grant a request for an ITAAC hearing and the admission requirements once a hearing is granted).

199. See Atomic Energy Act of 1954, 42 U.S.C. § 2011 (2011) (“[T]he development, use, and control of atomic energy shall be directed so as to promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise.”).

200. See, e.g., *Grannis v. Ordean*, 234 U.S. 385, 394 (1914) (“The fundamental requisite of due process of law is the opportunity to be heard.”).

201. See *Goldberg v. Kelly*, 397 U.S. 254 (1970) (articulating a three-part balancing framework to determine whether a procedural due process violation has occurred when benefits were terminated without notice or a hearing and holding that such violation did in fact occur).

additional procedural safeguards would have had substantial value in protecting the interest at stake.²⁰²

In addition to these legal problems, other issues will likely surface. The applicant is at the helm throughout the ITAAC implementation phase.²⁰³ With no required agency oversight and no comparable, explicit role for members of the public, assurance of compliance with each ITAAC is based almost entirely on the information submitted by the applicant to the agency to demonstrate that the applicant complied.²⁰⁴ Similarly, the regulations grant the agency discretion in choosing whether to conduct a section 103(a) hearing according to formal or informal adjudicatory procedures.²⁰⁵ While this is not necessarily legally problematic, the manner in which these proceedings are conducted will certainly be subject to close scrutiny to ensure the processes adopted comply with the procedural requirements set forth in the APA. In its decision in *Citizens Awareness Network, Inc.*,²⁰⁶ the First Circuit sent a strong message to the agency in particular: “Should the agency’s administration of the new rules contradict its present representations or other wise flout [the APA’s principles], nothing in this opinion will inoculate the rules against future challenges.”²⁰⁷

B. Responding to Change in a Frontloaded Regulatory Scheme

Under the bifurcated licensing scheme, most questions remained unanswered until the licensee was ready to load fuel.²⁰⁸ With the lessons from the generation of plants licensed under Part 50, the agency retooled by moving major decisions to the beginning of the process, limiting procedural formality of licensing proceedings, and narrowing the scope of those proceedings—with the goal of providing for timely, meaningful participation, settling issues on the front end, and providing licensees with a

202. See *Mathews v. Eldridge*, 424 U.S. 319, 335 (1976) (applying *Goldberg*’s three-part balancing framework in an administrative adjudication to determine whether a procedural due process violation had occurred when benefits were terminated without an opportunity for an evidentiary hearing).

203. See 10 C.F.R. § 52.99(b), (c) (2011) (granting a licensee the authority to proceed “at its own risk with design and procurement activities” with regard to activities subject to ITAAC, stating only that the applicant must perform and meet all ITAAC (with no required oversight) and subsequently provide sufficient notice to demonstrate they have complied).

204. See *id.* § 52.99(c)(1) (“The notification must contain sufficient information to demonstrate that the described inspections, tests, and analyses have been performed and the prescribed acceptance criteria have been met.”). NRC findings are based almost exclusively on the information provided in these periodic reports.

205. See *id.* § 52.103(d) (setting forth the Commission’s discretion in choosing the procedure for a section 103(a) hearing).

206. *Citizen’s Awareness Network, Inc. v. United States*, 391 F.3d 338 (1st Cir. 2004).

207. See *Citizen’s Awareness Network*, 391 F.3d at 354 (setting forth a caveat to the ruling that the NRC’s procedural rules do not violate the Administrative Procedure Act).

208. See *supra* Part II.B (noting the inefficiencies of the old regulatory scheme).

sort of blueprint increased certainty—all to reduce the risks involved in nuclear power projects.²⁰⁹ In a static world, this framework might prove infallible; however, in a construction phase that spans upwards of ten years that is affected by countless external factors—a spike in commodity prices, unrest in a supply nation, natural disaster, political crisis, and everything in between—change is inevitable.

The importance of providing an opportunity for a hearing for certain license amendments cannot be understated; however, the overbreadth of the amendment requirements²¹⁰ has already proven problematic, which indicates that this problem will only be exacerbated in the context of a combined license proceeding.²¹¹ Unless the agency revises its approach to handling changes throughout the development of a nuclear facility, the current amendment and hearing provisions set this fleet on course for an effective reversion to the delays and cost increases characteristic of the two-step process. The “dirt issue” at Southern Company’s Vogtle’s site demonstrates how.

With its combined license pending,²¹² Southern Company charged forward with excavation activities pursuant to its Limited Work Authorization and authorized by its early site permit.²¹³ In its August 2006 ESP application, Southern Company made reference to the specific dirt to be used for backfill at the excavation site.²¹⁴ Later, it became apparent that they needed more dirt than was available in the location specified, implying a change to the ESP would be necessary, and the agency strictly adhered to the regulation by requiring Southern Company to file a licensing

209. See *supra* Part II.C (describing the regulatory regime under Part 52).

210. See, e.g., 10 C.F.R. § 52.98(f) (2010) (“Any modification to, addition to, or deletion from the terms and conditions of a combined license, including any modification to, addition to, or deletion from the [ITAAC] contained in the license is a proposed amendment to the license. There must be an opportunity for a hearing on the amendment.”); see also *id.* § 52.39(e) (“The holder of an early site permit may not make changes to the early site permit, including the site safety analysis report, without prior Commission approval. The request for a change to the [ESP] must be in the form of an application for a license amendment . . .”). These provisions refer to amendments to a combined license or ESP, respectively, and only the former triggers the hearing opportunity. Note that modifications to a standard design certification are not permitted unless the Commission makes certain findings in a rulemaking. See *generally id.* § 52.63.

211. See, e.g., *id.* § 52.98(f) (noting that an amendment automatically triggers hearing rights). This is only the case in the combined license context.

212. See *generally* Nuclear Regulatory Comm’n, Acceptance for Docketing of An Application for Combined License for Vogtle Electric Generating Plant Units 3 and 4, Nos. 52-025 & 52-026 (ML 081480138), May 30, 2008.

213. See *generally* Nuclear Regulatory Comm’n, Early Site Permit and Limited Work Authorization, ESP-004, No. 52-011 (ML 092290157), Aug. 29, 2009.

214. See Southern Nuclear Operating Company, Vogtle Early Site Permit Application, Part 2—Site Safety Analysis Report, at 2.5.4-20–2.5.4-22 (ML 062290272), Aug. 31, 2006 (detailing specifics of backfill).

amendment.²¹⁵ The amendments (the first was followed by two subsequent amendments related to backfill) were eventually granted.²¹⁶ The effect of these amendments was the approval of the following: alternative sources of onsite dirt not set forth in the ESP, the use of that alternative dirt (not initially described in the ESP), and the reclassification of that dirt.²¹⁷ However, authorization to take and use dirt from an alternative onsite location was not granted before the frenzy of dealing with the innumerable details arose—the NRC and others comprehensively addressed certain impacts of the proposed changes, for example the impact on Southeastern Pocket Gophers,²¹⁸ over the course of several conference calls²¹⁹—all in the name of determining whether granting an amendment to use different dirt would be okay.

Considering the multitude of changes that inevitably will present themselves, the consequences of requiring an amendment for insignificant changes will be detrimental, even with the mechanisms built into the regulations to expedite the process under certain circumstances.²²⁰ When changes are negligible, the licensee's resources are wasted, the NRC staff is diverted away from important agency functions, and the door is left open for intervenors who want to bring chaos to a proceeding in order to halt the progress of a project. While frontloading the planning and decision-making processes was a laudable means to obtaining the agency's objectives,²²¹ the efforts will be for naught without some mechanism to handle insignificant

215. See 10 C.F.R. § 52.39(e) (2011) (requiring an amendment for *any* change to the ESP, including a change to the site safety analysis report (emphasis added)).

216. See generally Nuclear Regulatory Comm'n, Amendment to Early Site Permit and Limited Work Authorization, Amendment No. 3 to ESP-004, No. 52-011 (ML 101870522), July 9, 2010.

217. See *id.* (describing Southern Company's third amendment related to backfill); Nuclear Regulatory Comm'n, Amendment to Early Site Permit and Limited Work Authorization, Amendment No. 2 to ESP-004, No. 52-011 (ML 101760370), June 25, 2010 (describing Southern Company's second amendment related to backfill); Nuclear Regulatory Comm'n, Amendment to Early Site Permit and Limited Work Authorization, Amendment No. 1 to ESP-004, No. 52-011 (ML 101400509), May 21, 2010 (describing Southern Company's third amendment related to backfill).

218. Southeastern Pocket Gophers are burrowing rodents that fall into the "Least Concern" category according to the International Union for Conservation of Nature, which assigns conservation status to all species. If placed on a continuum, the "Least Concern" category sits on the polar opposite extreme of those species that are listed as extinct.

219. Summary of the Teleconference Calls Held with the Georgia Department of Natural Resources for the Vogtle Electric Generating Plant, Units 3 and 4 Onsite Backfill Amendment (ML 101670079), May–June 2009.

220. See, e.g., 10 C.F.R. § 50.91(a)(6) (2010) (setting forth the provision that allows for abbreviated procedures in exigent circumstances so long as the agency determines the amendment involves "no significant hazards considerations"). This provision was utilized by the NRC when it addressed the "dirt" issue at the Vogtle site.

221. See *supra* Part II.B (describing the risk-reduction, efficiency, and predictability-enhancing as objectives of the new licensing scheme).

modifications. Further, absent some flexibility to handle change, hopeful licensees will have an incentive to minimize specificity in their application in order to avoid their own “dirt” issue, creating a whole new set of problems.

IV. Staying Afloat: How to Achieve a Stable Regulatory Framework that Can Support a Thriving Nuclear Industry

If the combined license proceedings carry on as predicted, we may witness the beginning of construction of the first facility among this tranche of reactors by year’s end.²²² With Southern Company’s current cost projections at \$14.5 billion and the fact that the Vogtle units are just two of the twenty-seven proposed reactors on deck, the agency, industry, and the American public cannot afford a failure to fix the regulatory flaws set forth in Part III.

A. Effective Management in the Context of Nuclear Development

In order to effectively address the ITAAC review and amendment issues, both industry members and the NRC face significant challenges going forward. Flawless management will be critical. Not only is effective management (in this complex setting) essential to ensuring a safe operating facility that enhances the general welfare,²²³ but it is also essential to gaining the public’s trust. Exemplary management requires painstaking documentation of (literally) millions of details, unfaltering communication among all parties, and organization of this body of information in a comprehensible fashion that allows for complete transparency. From the agency’s perspective, failure to take each of these seriously will cause it to be looked upon as the industry’s big brother, rather than the removed regulator working to ensure public health and safety. From industry’s perspective, failure to pursue all means to further these managerial objectives opens the door to legal challenges and threatens substantial cost consequences, which will lead to significant setbacks for nuclear projects.²²⁴

Early indications suggest that all parties are taking this seriously. Last July, work at the Vogtle site was suspended for two days after an *internal* audit conducted by the contractors revealed a failure to properly

222. See *supra* note 151 and accompanying text (noting that Southern Company expects its Vogtle COL to be issued in 2011).

223. See *supra* note 199 (stating the purpose of the Atomic Energy Act, the basis for the NRC’s very own existence, which may inform one of the agency’s regulatory purposes).

224. See *supra* note 17 and accompanying text (noting the failure to manage in the case of the Zimmer and Shoreham plants, which ultimately led to failed nuclear projects after billions of dollars were spent).

document background checks of site workers.²²⁵ A company official noted that it was taking the “documentation and review process very seriously and [would] continue to regularly audit its practices,” noting that “[s]afety-related work [would] resume *after* procedural requirements [were] met”²²⁶ The NRC appears to be taking great steps to improve public access to information—in addition to its ADAMS web-based document room containing hundreds of thousands of documents, the NRC headquarters provides public access to millions of additional documents, and the agency is taking steps to provide easy access in a user-friendly manner.²²⁷

With thorough documentation, communication characterized by full disclosure, complete transparency, and effective management leading every aspect of a project will come public trust in the regulators to do their job, *even if* the public is not actively involved as an official party in a proceeding.²²⁸ Take the issue that arose with the hypothetical ITAAC set forth in Part III.A, *supra*. With full disclosure and easy access to information, a member of the public can discover and make known that the closed ITAAC (even if implemented and met), because of a material flaw in its definitional phrase, does *not* in fact provide reasonable assurance of adequate protection of the public health and safety as required by the regulations.²²⁹ Even though the regulations preclude intervention, if the industry and the agency take these imperatives seriously, the interested party is not without recourse. Part 52 mandates that information “shall be complete and accurate in all respects”²³⁰ and requires that the applicant

225. See Stephanie Toone, *Work on 2 Vogtle Sites Halted: Incorrect Background Checks Cause Abeyance*, AUGUSTA CHRON., July 7, 2010, available at <http://chronicle.augusta.com/news/metro/2010-07-07/work-2-vogtle-sites-halted> (noting that the fitness-for-duty exam given to site workers, which included questions dealing with issues such as substance abuse, was conducted verbally and was thus insufficient, causing the company to halt safety-related work for two days while they took corrective action).

226. *Id.* (emphasis added).

227. See, e.g., *Better, Faster, Stronger: The NRC Streamlines Content Management*, CHIEF INFO. OFFICERS COUNCIL, <http://www.cio.gov/pages.cfm/page/Better-Faster-Stronger-The-NRC-Streamlines-Content-Management> (last visited Dec. 4, 2011) (“The new ADAMS will provide a modern, flexible, and interoperable user experience that resonates with a younger workforce.”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

228. See, e.g., Harold P. Green, *Public Participation in Nuclear Power Plant Licensing: The Great Delusion*, 15 WM. & MARY L. REV. 503, 522 (1974) (“The AEC should be relied upon and trusted to ensure adequate safety in precisely the same manner as is presently the case with the Federal Aviation Administration and the Food and Drug Administration in their areas of responsibility.”). Note that this call to increase the public trust in the (predecessor) agency was made while the last generation of plants was just getting underway. Today, this goal is attainable given advances in information technology.

229. See 10 C.F.R. § 52.17(b)(3) (2010) (implying that a closed ITAAC will necessarily demonstrate conformity with the ESP, the NRC’s rules and regulations, and the Atomic Energy Act, which is not the case under this hypothetical).

230. *Id.* § 52.8(a).

notify the agency if information is identified “as having for the regulated activity a significant implication for public health and safety or common defense and security.”²³¹ With sanctions available for “deliberate misconduct” for violations of any rule or regulation,²³² the party’s interests are safeguarded even if not permitted to intervene, and in the worst-case scenario, the party can take the information to the media. Fostering confidence in the agency, furthered by transparency of what is happening on the ground, will enable the regulations to overlay a solid foundation, encouraging the nuclear revival to charge forward.

B. Flexibility without Compromising the Dictates of the New Licensing Process and the URENCO Example

Southern Company’s combined license application references its own early site permit and a standard design certification for the AP1000 reactor designed by Westinghouse.²³³ In March 2009, the ASLB considered a petition to intervene and submit three contentions submitted by five joint petitioners.²³⁴ One issue in the proceeding was that Westinghouse (who actually designed the AP1000 and obtained standard design approval under Subpart E of Part 52) was seeking to amend its certified standard design for the AP1000.²³⁵ Petitioners argued that since that revision was still pending (and the agency had recently received its sixteenth and seventeenth²³⁶ revisions to the amendment), “a meaningful technical and safety review of the [combined license application could not] be conducted without the full disclosure of the final and complete reactor design,”²³⁷ which was incorporated by reference in the COL application. The ASLB rejected the contentions for their “failure to proffer a specific, sufficiently supported material issue regarding a safety concern associated with the interaction between the pending AP1000 [revisions] and the Vogtle [COL application].”²³⁸ While applying its characteristic strict interpretation of the procedural requirements for admitting contentions, the ASLB’s order

231. *Id.* § 52.8(b).

232. *See id.* § 52.4(c) (prohibiting deliberate misconduct and referencing the enforcement mechanisms for any violation).

233. *See* S. Nuclear Operating Co., 69 N.R.C. 139, 145 (2009) (noting that Westinghouse designed the units Southern Company referenced in its standard design certification).

234. *See id.* at 145–46 (setting forth the procedural facts).

235. *See id.* at 156 (noting that the previously approved standard design certification was facing potential modification).

236. The agency received the eighteenth revision to the amendment on December 1, 2010.

237. S. Nuclear Operating Co., 69 N.R.C. at 155 (quoting the two nearly identical proposed contentions).

238. *Id.*

expressed concern about the petitioners “realistic opportunity” to submit a future challenge after the AP1000 rulemaking, given the stringent admissibility requirements and timing issues.²³⁹

When the need for amendment arises in the context of a single application, complications arise; in the context of a combined license incorporating other licenses by reference, the complexity increases exponentially; and when implemented ITAAC are affected by these changes, one starts to get the picture of how a proceeding may quickly devolve into chaos while parties wrangle over how to proceed, perhaps over a change as simple as utilizing dirt from one area on a 3,100-acre plot to supplement the dirt that was specified in the application (from the same 3,100-acre plot).²⁴⁰

There is an undeniable need for flexibility within this new regulatory scheme. How is this to be accomplished without forgetting the lessons of the past? Interpreting section 103(b) liberally to allow the interested party to request a hearing regarding the materially flawed ITAAC might seem prudent on first glance²⁴¹—until one recalls how proceedings under the two step devolved into chaos when the ASLB essentially interpreted the procedural rules away, allowing parties to intervene and anchor a proceeding.²⁴² Further, while amendment procedures may not be necessary to address certain changes, given the incredible safety factors implicated in a nuclear power generation facility, the issue cannot be taken lightly.

Thus, the NRC should maintain its stringent procedural requirements but look to other areas of nuclear licensing that have had success to serve as a model for the new nuclear plant proceedings. First, currently operating facilities can serve as a guide for how to deal with change. While amendments are required for some changes to an operating license, there are provisions that allow the licensee to make changes and then report to the NRC after the fact.²⁴³ Adopting a comparable provision to apply to new nuclear plants makes sense—while the Southeastern Pocket Gopher might not have had its time to shine, resources might have been dedicated to other more important areas had Southern Company had the ability to go ahead and use the alternate dirt (and had they followed up with notification to the agency).

239. *See id.* at 158 (expressing concern regarding the petitioner’s future ability to question the safety impacts of the revisions once approved, in light of the high threshold for admissibility, and ultimately referring the issue to the Commission).

240. *See supra* Part III.B (discussing the “dirt” issue at the Vogtle site).

241. *See supra* Part III.A (describing the hypothetical to which this refers).

242. *See supra* Part II.A (explaining the two-step process and the Houston Lighting and Power proceeding to which this refers).

243. *See* 10 C.F.R. § 50.59(c) (2011) (setting forth the criteria that, if met, will allow a licensee to fix a problem or make a change without obtaining a license amendment).

The URENCO Group's success²⁴⁴ in obtaining a license to operate a uranium enrichment facility under Part 70 of the regulations can serve as a model for attaining such flexibility in the Part 52 context. URENCO submitted its license application and environmental report under Part 70 in December 2003, the agency granted the license in June 2006, and the facility was inaugurated in June 2010.²⁴⁵ While the Part 70 scheme differs significantly from the new nuclear licensing regulations, the URENCO experience is instructive, particularly in light of how the judiciary handled a challenge to the legality of the operating license. Individuals living near the facility filed a petition for review of the NRC's decision to grant URENCO's license in the U.S. Court of Appeals, District of Columbia Circuit, claiming statutory violations.²⁴⁶ Petitioners alleged that "the NRC violated the Atomic Energy Act by 'supplementing' the [environmental impact statement] after the hearings on the license application,"²⁴⁷ along with several other claims, all of which were rejected.²⁴⁸ In its decision, the court found that the NRC had thoroughly considered the necessary environmental issues and looked beyond the environmental impact statement ("EIS") to reach that conclusion: "In addition to the EIS document, the Licensing Board and the NRC subsequently developed an *exhaustive record* as they considered petitioners' environmental contentions and supplemented the EIS. . . . The agency plainly met its NEPA obligation to take a 'hard look' at the environmental consequences of approving the license."²⁴⁹ This suggests courts might be willing to leave the agency some room for flexibility with regard to applications and licenses under the appropriate circumstances. If this is true, there may be some relief to the agency seeking to alleviate the tension between requiring applicants to provide massive amounts of information to ensure public health and safety

244. See, e.g., Press Release, Nuclear Energy Inst., NEI Congratulates URENCO on Inauguration of Uranium Enrichment Facility in N.M. (June 3, 2010), available at <http://www.nei.org/newsandevents/newsreleases/nei-congratulates-urengo-on-inauguration-of-uranium-enrichment-facility-in-nm/> ("This project is noteworthy for its status as a success story in nuclear facility licensing, for its considerable economic impact in the region, for its exemplary interactions with state and community leaders, and for its role in increasing domestic sources of uranium enrichment services.").

245. See *Louisiana Energy Services (LES) Gas Centrifuge Facility*, NUCLEAR REGULATORY COMM'N, <http://www.nrc.gov/materials/fuel-cycle-fac/lesfacility.html> (last visited Nov. 16, 2011) (providing the license application and environmental report as well as other information about URENCO) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

246. See *Nuclear Info. & Res. Serv. v. Nuclear Regulatory. Comm'n*, 509 F.3d 562, 565 (D.C. Cir. 2007) (describing the parties to the case and petitioners claims).

247. *Id.* at 568.

248. See *id.* at 571 (denying the petitions for review and upholding the NRC's decision to grant the license to produce enriched uranium as fuel for nuclear reactors).

249. *Id.* at 569.

and creating conditions that are not guaranteed to sink the agency under its own administrative load.

V. Conclusion

The two-pronged approach set forth in Part IV, *supra*, equips the NRC, together with industry, to conquer the legal and practical challenges faced as this fleet of reactors cruises toward the construction phase. By taking the steps necessary to ensure exemplary management on all fronts, and by providing for flexibility within the regulatory framework without compromising the agency's hard line stance and other efficiency-enhancing tactics, the new licensing scheme may be judged a success. First, this approach will allow for *better*, and thus legally adequate, public participation, even absent increasing public access to these proceedings. As an ancillary but important matter, improving the flow of information and taking steps to ensure transparency will also increase the public confidence in the program generally. Second, in addition to eliminating the legal barriers, this two-pronged approach may have the practical effect of bringing about further streamlining of the licensing process, which will be essential to avoiding the defects of the two-step process that these regulations intended to cure.

The stakes are high for industry, the agency, and the American public. The benefits of creating a stable licensing framework to support a safe and thriving nuclear power industry are vast; realizing the ends the ITAAC process set out to achieve and effectively managing the licensing process in a dynamic world will make those benefits possible. Success will increase the contribution of cheaper, cleaner, more reliable energy within our energy portfolio, create tens or even hundreds of thousands of jobs, provide environmental advantages other energy sources lack, move us closer to energy independence, and bring immense economic benefits. In addition to losing the benefits, the costs of failure will not only be reflected on the income statements of Southern Company and its counterparts, but also on the value of the agency and on the electricity bills of you and me. With the combined license for Vogtle expected in the very near future and other projects close behind, the new licensing regulations are in their defining moment.