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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	
Exelon Generation Company, LLC	Docket No. 52-007-ESP
(Early Site Permit for Clinton ESP Site)	ASLBP No. 04-821-01-ESP

INTERVENORS' PETITION FOR REVIEW OF THE ATOMIC SAFETY AND LICENSING BOARD'S DISMISSAL OF CONTENTION 3.1 AND REJECTION OF INTERVENORS' PROPOSED AMENDED CONTENTION 3.1

Pursuant to 10 C.F.R. 2.341(b), Intervenors Environmental Law and Policy Center, Blue Ridge Environmental Defense League, Nuclear Energy Information Service, Nuclear Information and Resource Service, and Public Citizen ("Intervenors") hereby petition the NRC to review the July 28, 2005 Memorandum and Order ("Order") of the Atomic Safety and Licensing Board ("Board") terminating the contested portion of this proceeding regarding Exelon's application for an Early Site Permit ("ESP") for the proposed Clinton 2 nuclear power plant. In so ruling, the Board dismissed Intervenors' Clean Energy Alternatives Contention ("Contention 3.1") and refused to admit Intervenor's proposed Amended Contention 3.1, which demonstrates genuine disputes of material issues of law and fact regarding the analysis of alternatives to the new nuclear power being proposed in this proceeding.

The Board has failed to provide for the rigorous exploration and objective evaluation of better, lower-cost, safer, and environmentally preferable energy efficiency and clean energy (wind, solar, and natural gas) alternatives that is required by the National Environmental Policy Act ("NEPA"). 40 C.F.R. 1502.14(a). First, the Board improperly narrowed the scope of

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alternatives to exclude energy efficiency by blindly accepting Exelon's business goal of creating base load power as the purpose for the project under the National Environmental Policy Act ("NEPA").[1] Second, the Order ignores genuine disputes of material fact and law regarding the comparative environmental impacts and costs of clean energy alternatives and nuclear power. Finally, the Board approved of an inadequate assessment of a combination of clean energy alternatives that failed to provide any beneficial role for renewable sources such as wind and solar. As a result of these errors, the Commission should reverse the Board's Order and order that Intervenors' Amended Contention 3.1 be admitted in this proceeding.

The standards for review set forth in 10 C.F.R. 2.341(b)(4) are satisfied here. This petition presents a substantial and important question of law and policy, 10 C.F.R. 2.341(b)(4)(iii), namely whether, in today's deregulated electricity market, it is appropriate for the NRC to blindly accept a private company's business goals as the purpose for a project under NEPA. While, as the Board noted, this is an issue of first impression for the Commission, the case law is clear that NEPA and the NRC's status as an independent regulatory agency require the Commission to ensure that the project purpose allows for the consideration of all reasonable alternatives to new nuclear power. Because the Board's blind deference to Exelon's business goals excludes reasonable energy efficiency alternatives, the Board's Order is based on a legal conclusion that departs from and is contrary to established law. Review is therefore also appropriate under 10 C.F.R. 2.341(b)(4)(ii).

The Commission should also review the Board's Order because it is based on factual findings that are clearly erroneous. 10 C.F.R. 2.341(b)(4)(i). The record is clear that clean

1 The Board's ruling on purpose and energy efficiency alternatives in the July 28, 2005 Order is very similar to the Board's August 6, 2004 decision to exclude energy efficiency alternatives from Intervenors' admitted Contention 3.1. This Petition, therefore, also challenges the Board's August 6, 2004 decision regarding energy efficiency and the purpose of the project.

energy and energy efficiency alternatives would have fewer environmental impacts and cost less than new nuclear power. The Board's findings to the contrary are clearly erroneous and, therefore, cannot support the Board's conclusions regarding the reasonableness of alternatives to new nuclear power.

I. FACTUAL BACKGROUND.

On September 25, 2003, Exelon submitted an application and supporting Environmental Report ("ER") to the NRC, pursuant to 10 C.F.R. Part 22, seeking an ESP for the proposed Clinton 2 nuclear power plant in Clinton, Illinois. Intervenors moved to intervene in opposition to the permit, filing various contentions pursuant to 10 C.F.R. § 1.309(f) challenging the sufficiency of the ESP application and ER. In its order of August 6, 2004 ("August 6 Order"), the Board granted Intervenors' motion to intervene and admitted for consideration in part Intervenors' Contention 3.1, the "Clean Energy Alternatives Contention." As admitted, Contention 3.1 states:

> The Environmental Review fails to rigorously explore and objectively evaluate all reasonable alternatives. In Section 9.2 of the Environmental Report, Exelon claims to satisfy 10 C.F.R. § 51.45(b)(3), which requires a discussion of alternatives that is "sufficiently complete to aid the Commission in developing and exploring" "appropriate alternatives . . . concerning alternative uses of available resources," pursuant to the National Environmental Policy Act. However, Exelon's analysis is premised on several material legal and factual flaws that lead it to improperly reject the better, lower-cost, safer, and environmentally preferable wind power and solar power alternatives, and fails to address adequately a mix of these alternatives along with gas-fired generation and "clean coal" resource alternatives. Therefore, Exelon's ER does not provide the basis for the rigorous exploration and objective evaluation of all reasonable alternatives to the ESP that is required by NEPA.

(August 6 Order at Appx. A) The Board, however, excluded a critical portion of Intervenors' proposed contention by rejecting the argument that Exelon should consider energy efficiency

alternatives to new nuclear power. (*Id.* at 16-17). The Board concluded that such alternatives were inconsistent with Exelon's business purpose of generating base load power, and that consideration of energy efficiency would constitute an analysis of the "need for power" contrary to the Commission's regulations, 10 C.F.R. 52.17(a)(2), 52.18. (*Id.*).[2]

The NRC Staff on August 23, 2004 sent Exelon a Request for Additional Information ("RAI") regarding the issues raised in Contention 3.1. On September 23, Exelon filed its RAI Response, in which the applicant purported to examine clean energy alternatives. Exelon acknowledged that a combination of wind, solar, and natural gas or "clean coal" "could be used to generate baseload power and would serve the purpose of" the proposed Clinton 2 facility. (RAI Response at 18). Yet Exelon rejected wind power and solar power, both alone and in combination with natural gas and "clean coal," because they purportedly are not environmentally preferable and are more costly than new nuclear power. (*Id.* at 19).

On March 8, 2005, the NRC Staff issued its Draft EIS for Exelon's ESP application. The Draft EIS accepts Exelon's assertion that the purpose of this project is to generate base load power and rejects energy efficiency, wind, and solar power alternatives as failing to meet this purpose. Relying heavily on the discussions of alternatives provided by Exelon, the Draft EIS asserts that new nuclear power is "preferable" to producing energy from coal, natural gas, or a combination of alternatives that relies heavily on natural gas. (Draft EIS at 8-22).

On March 17, 2005, Exelon filed a Motion for Summary Disposition of Contention 3.1, asserting that Contention 3.1 was a contention of omission that was cured by the RAI Response. (Exelon Motion at 2). Exelon also attached an affidavit discussing clean energy alternatives, and

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2 On August 24, 2004, Intervenors filed with the Commission a petition for interlocutory review of the Board's exclusion of energy efficiency alternatives from Contention 3.1. The Commission declined to address the merits of that petition, instead concluding that interlocutory review of the energy efficiency issue was not appropriate. (Commission Memorandum and Order, CLI-04-31, Nov. 10, 2004).

argued that the affidavit along with the RAI Response and the Draft EIS demonstrated that there is no genuine issue of material fact regarding clean energy alternatives. (*Id.*) In a series of Orders following Exelon's Motion, the Board concluded that Contention 3.1 was a contention of omission and that, therefore, any response to the substance of the additional discussions of clean energy alternatives found in Exelon's filings and the Draft EIS would have to take the form of a motion to amend Contention 3.1 or to file a late contention. (Board Order, Mar. 23, 2005 at 2-3; Board Order, Mar. 30, 2005 at 5-6).

On April 6, 2005 Intervenors filed a response to Exelon's Motion, showing that Contention 3.1 was not simply a contention of omission and had not been cured, and that Exelon was not entitled to summary disposition as a matter of law. In response to Exelon's claim that there is no genuine issue of material fact regarding clean energy alternatives, Intervenors also demonstrated that the RAI Response, Exelon Affidavit, and Draft EIS continue to include material factual and legal flaws that lead them to improperly reject better, lower-cost, safer and environmentally preferable clean energy alternatives.

On April 22, 2005, Intervenors moved to amend Contention 3.1. In the Motion to Amend, Intervenors demonstrated that the discussions of alternatives in the Draft EIS and Exelon's RAI Response were flawed because they: (1) set forth a purpose – the creation of base load power – that has not been evaluated and improperly excludes reasonable energy efficiency alternatives; (2) overestimated the environmental impacts of clean energy alternatives and underestimated the impacts of new nuclear power, leading to the incorrect conclusion that nuclear power is environmentally preferable to clean energy alternatives; (3) improperly concluded that new nuclear power would be less costly than clean energy alternatives, and (4)

inadequately assessed combinations of reasonable clean energy alternatives. (Intervenors' Motion to Amend at 2-3).

In its July 28, 2005 Order, the Board granted Exelon's Motion for Summary Disposition and denied Intervenors' Motion to Amend Contention 3.1. With no outstanding contentions remaining, the Board terminated the contested portion of the ESP proceeding.

II. STATEMENT OF WHERE THE MATTERS RAISED IN THIS PETITION FOR REVIEW WERE PREVIOUSLY RAISED BEFORE THE BOARD.

Intervenors have raised all of the energy efficiency and clean energy alternatives issues presented herein throughout the licensing proceedings before the Board. Intervenors noted these issues in their Hearing Request and Petition to Intervene filed with the Commission on January 12, 2004. (Hearing Request at 5). Intervenors provided a thorough explanation of why NEPA requires consideration of the purpose of the project, as well as analysis of energy efficiency and clean energy alternatives, in their Supplemental Request filed with the Commission on May 3, 2004. (Supplemental Request at 5-9). In support, Intervenors also attached a number of studies as exhibits to its Supplemental Request, which document the feasibility and economic benefits of energy efficiency and clean energy generation methods. (Supplemental Request, Exhs. 3-10). Both Exelon and the NRC Staff addressed these issues in their May 28, 2004 responses to the Intervenors' Supplemental Request. (Exelon Response at 22-26; NRC Staff Response at 26-27). Intervenors provided further support for their position on these issues in the Reply Brief in support of their motion to intervene filed on June 9, 2004. (Reply Brief at 6-9). Intervenors' Clean Energy Alternatives contention was also discussed during the first day of the prehearing conference on Intervenors' motion to intervene. (Hearing Tr. at 186-219).

After the Board admitted a modified version of Intervenors' Clean Energy Alternatives Contention in its August 6, 2004 Order, the parties addressed the issues presented herein on a number of different occasions. In response to a Request for Additional Information ("RAI") from the NRC Staff, Exelon presented an RAI Response that purported to analyze clean energy alternatives to new nuclear power. (Exelon's RAI Response, Sept. 23, 2004). Various alternatives were also purportedly addressed in the NRC Staff's Draft EIS for the ESP application. (Draft EIS, at 8-1 to 8-22). The adequacy of the discussion of alternatives in those documents – which Intervenors are challenging herein – was then addressed in Exelon's March 17, 2005 Motion for Summary Disposition of Contention 3.1 and the April 6, 2005 Responses of both Intervenors and the NRC Staff to Exelon's Motion. These issues were also raised in the Intervenors' April 22, 2005 Motion to Amend Contention 3.1, the May 6, 2005 Responses of Exelon and the NRC Staff, and the Intervenors' May 20, 2005 Reply in support of its Motion.

III. SUMMARY OF DECISION FOR WHICH REVIEW IS SOUGHT.

The Board's Order at issue here involves rulings on four primary issues. First, the Board rejected Intervenors' claim that the agency's acceptance of Exelon's purpose of creating base load power and concomitant rejection of energy efficiency alternatives violated NEPA. Citing to case law suggesting that it is appropriate for the Commission to take into account a company's economic goals for a project, the Board concluded that the Commission need only evaluate "the alternative means by which a particular applicant reaches its goals." (Order at 19). According to the Board, the NRC Staff's adoption of Exelon's purpose of generating base load power was proper and only alternatives that generate such power need be considered. (*Id.* at 20). Because energy efficiency seeks to reduce demand for power, it need not be considered as it does not

involve the generation of base load power and it would require a consideration of the "need for power" in contravention of 10 C.F.R. 52.17(a)(2) and 52.18. (*Id.* at 21-22).

Second, the Board rejected the Intervenors' claims that the NRC Staff and Exelon had improperly concluded that clean energy alternatives are not environmentally preferable to new nuclear power. The Board concluded the proposed Amended Contention 3.1 did not meet the "differ significantly" requirement of Section 2.309(f)(2), in that it did not allege "errors... in data or assumptions that... would lead to definitively and materially different results, either in the assessment of the environmental impact of a particular generation option or of the 'benefits' which such an option creates." (Order at 42-45).

Third, the Board concluded that evidence presented by the Intervenors challenging cost estimates for nuclear power submitted by Exelon did not demonstrate a genuine dispute of material fact. (Order at 45-50) According to the Board, cost estimates go to the benefits of Exelon's proposal and, therefore, inclusion and consideration of such information is purely optional. In addition, the Board held that it need not give significant weight to cost projections given their uncertain nature.

Finally, the Board rejected the Intervenors' assertion that Exelon and the NRC Staff had improperly provided no beneficial role to wind or solar power in their consideration of a combination of clean energy alternatives. (Order at 35-38). The Board asserted that the Intervenors claimed only that the benefits of such combination had been understated, not that the environmental impacts of such combination were overstated. According to the Board, such benefits need not be considered during this proceeding and, therefore, Intervenors had failed to raise a genuine dispute of material fact.

IV. THE BOARD HAS FAILED TO REQUIRE THE RIGOROUS EXPLORATION AND OBJECTIVE EVALUATION OF ALL REASONABLE ALTERNATIVES TO NEW NUCLEAR POWER.

The record before the Board provides a flawed analysis of energy efficiency and clean energy alternatives that fails to satisfy NEPA's requirement that all reasonable alternatives be "rigorously explored and objectively evaluated." 40 C.F.R. 1502.14(a). No party has disputed the fact that energy efficiency is a viable and cost-effective way to satisfy future energy needs (Intervenors' Supplemental Request at 7-8, Exhs. 3-13), and Exelon actually acknowledges that a combination of wind, solar, and natural gas or "clean coal" "could be used to generate base load power and would serve the purpose of" the proposed Clinton 2 facility. (RAI Response at 18). Yet Exelon and the NRC Staff decline to consider energy efficiency alternatives, and reject wind power and solar power alternatives, both alone and in combination with natural gas and "clean coal," because they purportedly are not environmentally preferable and are more costly than new nuclear power. (*Id.* at 19; Draft EIS at 8-17, 8-18, 8-21, 8-22).

The Board's conclusion that there is no dispute of material law or fact regarding Exelon's and the NRC Staff's discussion of alternatives to nuclear power is both legally and factually incorrect. The discussions of alternatives provided in Exelon's RAI Response and ER and the NRC Staff's Draft EIS are, in the words of Intervenors' expert Bruce Biewald, "inadequate, biased, inaccurate, and based upon out-of-date information." (Intervenors' Motion to Amend Contention 3.1, Biewald Affidavit at §IV). As explained below, the Board's conclusion to the contrary conflicts with well-settled NEPA requirements and ignores clear evidence in the record regarding the reasonableness of energy efficiency and clean energy alternatives.

A. The Board's Rejection of Energy Efficiency Alternatives Violates NEPA, is Not Supported by Agency Regulations, and is Based on Erroneous Factual Conclusions Regarding Exelon's Ability to Carry Out Energy Efficiency Efforts.

The Board's consideration of alternatives is fatally flawed because reasonable energy efficiency alternatives were improperly rejected. The Board concluded that energy efficiency alternatives should be excluded because they are inconsistent with Exelon's purpose of creating base load power, the consideration of such alternatives amounts to an improper analysis of the need for power, and Exelon cannot implement energy efficiency efforts. None of these reasons withstand scrutiny.

1. The Board's Decision Violates NEPA By Accepting A Limited Project Purpose That Improperly Precludes the Consideration Of Reasonable Alternatives.

The primary error in the Board's rejection of energy efficiency alternatives is that the Board violated NEPA by simply deferring to Exelon's purpose of creating base load power. The case law is clear that NEPA does not allow for wholesale deferral to the applicant's stated purpose where such purpose improperly restricts the analysis of alternatives. *Colorado Env'tal. Coalition v. Dombeck*, 185 F.3d 1162, 1174-75 (10th Cir. 1999); *Simmons*, 120 F.3d at 669; *Sylvester v. U.S. Army Corps of Engineers*, 882 F.2d 407, 409 (5th Cir. 1989); *Southern Utah Wilderness Alliance v. Norton*, 237 F.Supp. 2d 48, 53 (D.D.C. 2002); *Cf. Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, 46 Fed. Reg. 18026, 18027 (1981) ("reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant"). Instead, an agency "has the duty under NEPA to exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the

project," and should look at the general goal of the project rather than only those alternatives by which a particular applicant can reach its specific goals. *Simmons*, 120 F.3d at 669.

In blindly adopting Exelon's business goal, the Board has failed to define the purpose in this proceeding broadly enough to allow for the consideration of all reasonable alternatives. The siting of a new nuclear power plant in Illinois could be justified only if it is necessary for meeting future energy needs in the area. Energy efficiency presents a reasonable, feasible and cost-effective alternative – alone, and in combination with other clean energy alternative resources – to meeting those needs. (Intervenors' Supplemental Request at 7-9). In fact, both the State of Illinois and the U.S. government have recognized that energy efficiency plays a key role in addressing future energy needs. *See e.g.*, 20 ILCS 1120/2 (policy of Illinois is "to become energy self-reliant to the greatest extent possible, primarily by the utilization of the energy resources available within the borders of this State, **and by the increased conservation of energy**") (emphasis added); 42 U.S.C. § 6201 *et seq.* The Board's acceptance of a purpose that excludes this reasonable energy efficiency alternative is, therefore, inconsistent with NEPA. *Colorado Env'tal Coalition*, 185 F.3d at 1174-75; *Simmons*, 120 F.3d at 669; *Southern Utah Wilderness*, 237 F.Supp. 2d at 53.

The Board correctly notes that it is appropriate for the Commission to "take into account" a private applicant's goals in determining the purpose for a project under NEPA. *City of Grapevine v. Department of Transp.*, 17 F.3d 1502, 1506 (D.C. Cir. 1994); *Citizens Against Burlington*, 938 F.2d at 195; *Hydro Resources, Inc.*, 53 NRC at 55. The Commission, however, does not have to blindly adopt Exelon's business goals in order to take them into account. Instead, those goals are simply one factor to be considered as the Commission independently identifies a purpose that is broad enough to allow for the consideration of all reasonable

alternatives. *See, e.g., Southern Utah Wilderness*, 237 F.Supp. 2d at 53 ("An agency is obligated to take the needs and goals of the project applicant in mind when considering alternatives [*Busey*], but that obligation does not limit the scope of the agency's analysis to what the applicant says it needs").

The Board's approach not only fails to comply with NEPA, but is also inconsistent with the Commission's role as an independent regulatory body. NRC regulations require the Commission to conduct its licensing proceedings in a manner that is "receptive to environmental concerns and consistent with the Commission's responsibility as an independent regulatory agency for protecting the radiological health and safety of the public." 10 C.F.R. 51.10(b). In this role, the agency is to "independently consider" and "determine" whether NEPA has been complied with and whether the ESP license should be issued, denied, or conditioned. 10 C.F.R. 51.105(a)(1)-(3). These regulations make clear that the Commission must independently define its own purpose and range of alternatives, rather than simply deferring to Exelon's purpose for submitting an ESP application.

The exercise of independent analysis and decision making in licensing proceedings is especially important given the recent deregulation of the electrical power industry. In the past, decisions regarding the amounts and types of energy to produce were made by public utilities that were subject to stringent regulatory control and oversight by state and federal government agencies. In a deregulated market, however, little such oversight occurs, and private companies are free to pursue various energy options with virtually no input from the public or the government. Therefore, the Commission's independent selection of alternatives is crucial to maintaining the degree of oversight and public input in energy decision making that is envisioned by NEPA.

2. The Consideration of Energy Efficiency Alternatives Does Not Conflict With Commission Regulations That Provide That An ESP Applicant Does Not Have To Analyze The Need For Power.

The Board also attempts to justify its exclusion of energy efficiency alternatives on the ground that consideration of energy efficiency "is a surrogate for examination of the 'need for power'" which Commission regulations, 10 C.F.R. 52.17(a)(2), 52.18, does not require. (Order at 34). That is not logical or sensible here. Energy efficiency and nuclear power are two ways to meet whatever future energy needs might exist. If the Commission does not need to analyze the need for power before determining whether a new nuclear plant is appropriate, then the agency also does not have to consider the need for power before determining whether increased energy efficiency is appropriate.

In addition, the regulations do not foreclose an analysis of the need for power, but rather simply provide that an application and EIS "need not include" an assessment of benefits such as the need. 10 C.F.R. 52.17(a)(2), 52.18. In this case such as assessment is appropriate and necessary because the Board, Exelon, and the NRC Staff have all identified and relied on a need for power – i.e., the generation of base load power – to guide their consideration and rejection of alternatives to new nuclear power. Where a need has been identified as the basis for the consideration of alternatives, NEPA requires that the identified need be analyzed. *Natural Resources Defense Council v. U.S. Forest Serv.*, 2005 U.S. App. LEXIS 16194 (9th Cir. Aug. 5, 2005) (reliance on erroneous projections of need for timber rendered EIS for forest plan invalid); *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446-48 (4th Cir. 1996); *North Carolina Alliance for Transp. Reform, Inc. v. U.S. Dept. of Transp.*, 151 F.Supp. 2d 661, 688 (M.D.N.C. 2001) (EIS invalid where need statement based on inflated traffic projections). The Board's contrary interpretation of NRC regulations fails to comply with NEPA.

3. The Panel's Conclusion That Exelon Cannot Implement Energy Efficiency Efforts Is Clearly Erroneous And Does Not Justify Rejection Of Energy Efficiency Alternatives Under NEPA.

Finally, the Board erred factually and legally in concluding that energy efficiency alternatives need not be considered because Exelon is no longer able to carry out energy efficiency efforts under Illinois' supposedly deregulated utility system. (Order at 16). This ruling is not factually supported for two reasons. First, the Illinois Appellate Court has held that Exelon is, indeed, a "public utility" subject to the Illinois Public Utilities Act. *Abbot Laboratories, Inc. v. Illinois Commerce Commission,* Case Nos. 4-00-0922, 4-01-0034 (Ill. App. Ct. Oct. 4, 2001) (unpublished order).

Second, Commonwealth Edison, a public utility affiliate of applicant Exelon Generating Company, and fellow subsidiary of the applicant's parent company, Exelon Corporation, is fully capable of implementing numerous energy efficiency programs that would help to reduce future energy needs. Therefore, Exelon is capable of implementing energy efficiency alternatives – the company's apparent desire not to do so is not sufficient reason to preclude rigorous exploration and objective evaluation of this reasonable alternative.

In addition, from a legal standpoint, the Board's conclusion violates NEPA case law requiring the consideration of reasonable alternatives even if they are outside the scope of the applicant's or agency's authority. *See, e.g.*, 40 C.F.R. 1502.14(c); *Forty Questions*, 46 Fed. Reg. at 18027; *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 814 (9th Cir. 1999); *Cf. Natural Resources Defense Council, Inc. v. Hodel*, 865 F.2d 288, 295-96 (D.C. Cir. 1988). For example, in *Hodel* the Court concluded that the Department of Interior was required to consider increased fuel efficiency standards as an alternative to its five-year plan for offshore oil and gas leasing activity in environmentally sensitive areas. NEPA similarly requires the consideration of

energy efficiency alternatives to a new nuclear power plant even if such alternatives were outside of Exelon's power to implement, which they are not in this case.

B. The Board Ignored Genuine Disputes of Material Issues of Law and Fact Regarding the Comparative Environmental Impacts of Nuclear Power and Clean Energy Alternatives.

The Board next erred by concluding that Intervenors had failed to demonstrate any genuine dispute regarding the conclusion in the Draft EIS and Exelon's filings that clean energy alternatives are not environmentally preferable to new nuclear power. (Order at 38-45). In their proposed Amended Contention 3.1, Intervenors explained how the Draft EIS and Exelon filings overestimated the impacts of clear energy alternatives and/or underestimated the impacts of new nuclear power in a number of key areas. (Motion to Amend Contention 3.1 at 10-14; Biewald Affidavit at §III).

The Board found Intervenors' claims inadmissible on two primary grounds, both of which are clearly erroneous. First, the Board rejected the Intervenors' claim that the conclusion that clean energy alternatives are not environmentally preferable to nuclear power is undermined by the fact that nuclear power would impact many more resources than clean energy alternatives would. (Motion to Amend Contention 3.1 at 11-12). According to the Board, Intervenors' claim amounted to nothing more than a "bare assertion" which could be rejected because an alternative that impacts only one resource very severely could have a greater total impact than an alternative that impacts many resources only minimally. (Order at 40).

The Board's conclusion, however, overlooks the fact, pointed out by Intervenors, that both Exelon and the NRC Staff categorized all of the environmental impacts for both nuclear

power and clean energy alternatives as "SMALL,"[3] at least under certain scenarios. (Intervenors' Motion to Amend at 11-12). By identifying the degree of impact within each category for each alternative as SMALL, the analyses account for the severity factor noted by the Board. With each of the various impacts characterized as SMALL, it is clear that the number of resources impacted is the relevant factor for determining the total environmental impact of the proposed project versus alternatives. An alternative such as wind or natural gas that poses SMALL impacts in fewer resource areas is environmentally preferable to the proposed nuclear project, which impacts more resources, including human health and air and water quality. The Board's conclusion to the contrary is clearly erroneous.

Second, the Board concluded that the Intervenors had failed to demonstrate that the Draft EIS and Exelon filings provided flawed information regarding the comparative impacts of nuclear power and clean energy alternatives on specific resources, such as land use, birds, noise, air quality, radioactive waste exposure, and accident risks. (Order at 42-45). The Board's holding, however, ignores the evidence submitted by Intervenors that for each of these resources Exelon and the NRC Staff overestimated the impacts that clean energy alternatives would have and/or underestimated the impacts that nuclear power would have. (Intervenors Motion to Amend Contention 3.1 at 12-14).

For example, the Board rejects the Intervenors' showing regarding the comparative land use of wind and nuclear power on the ground that Exelon and the NRC Staff properly relied on the findings regarding the amount of land used set forth in Table S-3. (Order at 42). The

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3 It is important to note here that the Commission is not required to apply the SMALL, MODERATE, and LARGE approach to categorizing impacts that was proposed by Exelon and accepted by the Board. That categorization derives from regulations that apply only to renewal of licenses for existing nuclear plants, 10 C.F.R. Pt. 51 Appendix B, and has not been made directly applicable to Early Site Permit proceedings. Therefore, the Commission is free to ignore or modify these categories to the extent that they do not allow for an accurate comparison of the environmental impacts of nuclear power and clean energy alternatives

Board's holding, however, ignores that the acre-by-acre comparison of land use impacts by Exelon and the Staff does not account for the differences in the severity and duration of those impacts. The mining and enrichment of uranium, operation of a nuclear power plant, and storage of waste are all incompatible with other land uses and can impact land for up to tens of thousands of years. By contrast, wind power facilities can be sited on agricultural lands that continue to function as farms while the wind facilities operate and removed without the need for significant remediation to prepare the land for general use. (Intervenors' Motion to Amend at 12-13, Biewald Affidavit §III.G). Contrary to the Board's finding, therefore, it is erroneous to conclude that wind and nuclear power have comparable land use impacts.

For the reasons set forth above and in the Intervenors' Motion to Amend Contention 3.1, the Board erred in concluding that there is no genuine dispute of material issues of law and fact regarding the comparative environmental impacts of nuclear power and clean energy alternatives.

C. The Board Improperly Discounted a Genuine Dispute Regarding the Material Issue of the Comparative Costs of Nuclear Power and Clean Energy Alternatives.

The Board also erred in rejecting a genuine dispute regarding the comparative costs of nuclear power and clean energy alternatives. In their proposed Amended Contention 3.1, the Intervenors presented evidence showing that the U.S. Department of Energy and Massachusetts Institute of Technology both estimate that new nuclear power would be uneconomical, and that Exelon's claim that nuclear power would be cheaper than other alternatives is based on overly optimistic assumptions. (Motion to Amend at 15-17). This evidence directly contradicted Exelon's claim that no combination of clean energy alternatives would be cost competitive with

nuclear power (RAI Response at 17-18) and the NRC Staff's assertion that only "commercially viable" and "cost effective" alternatives have been considered (Draft EIS at 8-5, 8-21).

The Board's first ground for rejecting this portion of Intervenors' proposed Amended Contention 3.1 – that economics need not be considered in reviewing an ESP application (Order at 46) – violates NEPA. As part of the EIS process, "NEPA requires agencies to balance a project's economic benefits against its adverse environmental effects." *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446 (1996). The use of incorrect economic data can undermine the validity of an EIS by impairing the agency's consideration of the proposed project and by skewing the public's evaluation of the project. *Id.*; *South La. Envtl. Council, Inc. v. Sand*, 629 F.2d 1005, 1011-12 (5ht Cir. 1980). In addition, cost is a relevant factor in determining whether an alternative is feasible and reasonable under NEPA. *Communities, Inc. v. Busey*, 956 F.2d 619, 627 (6th Cir. 1992) (holding that alternatives may be rejected under NEPA if they involve extraordinary costs). The Board's holding that economic matters are of little to no relevance is, therefore, in direct conflict with established law under NEPA.

The Board attempts to excuse this violation of NEPA by stating that the exclusion of cost considerations is "an exclusion that is unique to applications for ESPs," and that costs and benefits will be considered during any construction or combined operating licensing permit proceeding. (Order at 33, n. 124). NEPA, however, does not make special exception for certain federal agency actions, such as the ESP process, by exempting them from economic analysis. Once an agency determines that preparation of an EIS is required by NEPA, the agency must provide full discussion of the components critical to comparing alternatives. 40 C.F.R. 1502.14. CEQ regulations counsel against late preparation of an EIS, where such delay would result in the EIS being used to "rationalize or justify decisions already made." 10 C.F.R. 1502.5. Putting off

the consideration of costs until the EIS for the construction or combined operating licensing permit would risk such *post hoc* rationalization especially given that an ESP would enable Exelon to incur costs for site preparation and preliminary construction activities.

In addition, the regulation relied on by the Board to claim that costs should not be considered in this proceeding, 10 C.F.R. 52.18, does not actually stand for that proposition. The cited regulation purports to permit exclusion of the analysis of "benefits," not costs. 10 C.F.R. 52.18. The Board's reading of the phrase "benefits" to include "costs" is inconsistent with the plain meaning of those terms as "costs" and "benefits" are antonyms not synonyms. That reading is also inconsistent with NRC regulations which require that a Draft EIS "include consideration of the *economic*, technical, and other *benefits and costs* of the proposed action and alternatives...". 10 C.F.R. 51.71(d) (emphasis added). Had the NRC wished to try to exclude the consideration of costs (in contravention of NEPA), the agency would have included the word "costs" in 10 C.F.R. 52.18 and not included it in 10 C.F.R 51.71(d).

Finally, even if the word "benefits" in 10 C.F.R. 52.18 does refer to costs, it is important to keep in mind that the regulation is only permissive. In particular, the regulation provides only that the Commission "need not" consider benefits, not that the consideration of benefits is prohibited. Where, as here, both the applicant and the NRC Staff have claimed that only cost effective alternatives are reasonable, a consideration of costs is plainly required.

The Board also rejected Intervenors' costs challenges on the ground that projecting costs is "an uncertain endeavor" and, therefore, should be given less weight by the agency. (Order at 49). In essence, having been presented with two conflicting views about the economic viability of nuclear power, the Board has decided to just dodge the issue by deeming it "uncertain."

The Board, however, cannot avoid a dispute over a material issue of fact by simply deeming it "uncertain." Here, both Exelon and the Intervenors have presented detailed projections, created by experts, regarding the material issue of the cost of nuclear power and its alternatives. The differences between those projections signify not uncertainty, but instead base level disagreements in modeling assumptions that lead to different results. Having been presented with a genuine dispute regarding the material issue of cost, the Board must admit Amended Contention 3.1 and hold a hearing at which it carefully examines those competing assumptions and determines what set of assumptions and cost estimates are most valid. 10 C.F.R. 2.309(f)(1).

D. The Board Ignored Intervenors' Contention that the Consideration of a Combination of Clean Energy Alternatives Overstates the Environmental Impacts of Such Combination.

Finally, the Board's Order must be reversed because it improperly rejects Intervenors' challenge to the consideration of a combination of clean energy alternatives in this proceeding. As Intervenors demonstrated in their Motion to Amend Contention 3.1, a combination of wind and natural gas would be environmentally preferable and less costly than new nuclear power. (Intervenors' Motion to Amend Contention 3.1 at 17-18, Biewald Affidavit §III).[4] Intervenors further explained that the combinations examined by Exelon and the NRC Staff understated the benefits and/or overstated the impacts of clean energy alternatives by failing to provide any beneficial role for wind power in such combinations. (Id. at 18-20).

4 As explained in Section IV.A above, energy efficiency is also a reasonable alternative that should be considered in any combination of alternatives. The inclusion of energy efficiency would further reduce both the environmental impact and cost of a combination of clean energy alternatives. (Motion to Amend Contention 3.1, Biewald Affidavit §III.D, Table 7).

The Board rejected this claim on two flawed grounds. First, the Board found that the Intervenors did not challenge the findings of the NRC Staff and Exelon regarding the supposed greater environmental impacts of a combination of clean energy alternatives. (Order at 36). This finding, however, is clearly erroneous. In fact, the Intervenors argued in their Motion and supporting reply brief that the conclusion that a combination of alternatives would not be environmentally preferable was based on the faulty premise that natural gas would have greater impacts than nuclear power. (Motion to Amend Contention 3.1 at 17-18; Reply in Support of Motion to Amend Contention 3.1 at 10).

In addition, the Intervenors demonstrated that the environmental impact of the combination considered by the NRC Staff and Exelon was overstated because the Staff failed to include a large enough portion of wind energy in that alternative. (Motion to Amend Contention 3.1 at 20; Reply in Support of Motion to Amend Contention 3.1 at 10). In particular, Intervenors noted that the assumption that any alternative must involve 2,180MW of natural gas ignores the up to 35% capacity value that wind provides. Given that capacity value, the amount of natural gas needed, and therefore the amount of environmental impacts created, is reduced as more wind power is added to the combination. The Board clearly erred in finding that Intervenors never raised this argument.

Second, the Board rejected the Intervenors' argument that a combination involving 2,180MW of natural gas plus additional wind capacity would have greater benefits than found by Exelon and the NRC Staff. (Order at 37). In particular, Intervenors noted that rather than assuming that the 2,180MW natural gas plant would operate below capacity when the wind was blowing, Exelon and the NRC Staff should have assumed that the natural gas plant would continue to operate at full capacity, thereby creating more power from the same amount of

installed capacity. (Motion to Amend Contention 3.1 at 18-20). The Board claimed that this contention was inadmissible because benefits cannot be considered in this proceeding. (Order at 37). As explained in Section IV.A.2 above, however, NEPA plainly requires such a consideration of benefits in this proceeding and the regulations cited by the Board, 10 C.F.R. 52.17 and 52.18, do not foreclose such a consideration.

V. CONCLUSION

As shown above, the Board erred as a matter of law and fact in concluding that there are no genuine disputes of material issues of law and fact regarding the analysis of alternatives to the new nuclear power being proposed by Exelon in this proceeding. The record is clear that energy efficiency and clean energy sources are better, lower-cost, safer, and environmentally preferable alternatives to new nuclear power, yet a rigorous and objective exploration of these alternatives has not occurred in this proceeding. Therefore, the Commission must reverse the Board's Order dismissing the contested portion of this proceeding and order the Board to admit and hold a hearing on Intervenors' proposed Amended Contention 3.1.

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Respectfully Submitted,

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