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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD PANEL

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

REPLY IN SUPPORT OF SUPPLEMENTAL REQUEST FOR HEARING AND PETITION TO INTERVENE BY ENVIRONMENTAL LAW AND POLICY CENTER, BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE, NUCLEAR INFORMATION AND RESOURCE SERVICE, NUCLEAR ENERGY INFORMATION SERVICE, AND PUBLIC CITIZEN

Petitioners Environmental Law and Policy Center, Blue Ridge Environmental Defense League, Nuclear Energy Information Service, Nuclear Information and Resource Service, and Public Citizen hereby reply to the Responses of Exelon Generation ("Exelon") and the Nuclear Regulatory Commission Staff ("Staff") to the Petitioners' Supplemental Request for Hearing and Petition to Intervene ("Supplemental Request"). In their Supplemental Request, Petitioners raised three contentions[1] – the Clean Energy Alternatives, Waste Confidence Rule, and Illinois State Moratorium contentions – that satisfy the NRC's admissibility requirements set forth in 10 C.F.R. § 2.309(f).

The Staff and Exelon Responses fail to demonstrate that any of the three contentions raised by the Petitioners are inadmissible. In fact, the Staff acknowledges that the bulk of the Clean Energy Alternatives contention – namely, Exelon's failure to consider alternative energy sources in combination and its reliance on outdated and flawed information – is admissible.

[1] Four of the Petitioners – the Blue Ridge Environmental Defense League, Nuclear Information Resource Services, Nuclear Energy Information Services, and Public Citizen – filed a separate Supplemental Request raising three additional admissible contentions. The Responses of Exelon and the Staff to those contentions will be addressed in a separate Reply filed by those four Petitioners.

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While the Staff and Exelon assert that energy efficiency and the need for power need not be considered in the alternatives analysis, their arguments contravene the clear requirement of the National Environmental Policy Act ("NEPA") to rigorously explore and objectively evaluate all reasonable alternatives. With regards to the Waste Confidence Rule contention, while the Staff and Exelon argue that the Waste Confidence Rule applies to a new Clinton reactor, the rulemaking history clearly demonstrates that the Rule applies only to existing reactors and, therefore, Exelon and the NRC must evaluate the environmental impacts of extended spent fuel storage on the Clinton site. Finally, as for the Illinois State Moratorium contention, Illinois' legal determination that no new nuclear plants should be located in Illinois is, contrary to the assertions of the Staff and Exelon, plainly a "material issue of law or fact" that falls within the scope of this proceeding. 10 C.F.R. 2.309(f)(1)(vi).

I. AS THE NRC STAFF LARGELY ACKNOWLEDGES, PETITIONERS HAVE RAISED AN ADMISSIBLE CONTENTION REGARDING EXELON'S FAILURE TO RIGOROUSLY EXPLORE AND OBJECTIVELY EVALUATE CLEAN ENERGY ALTERNATIVES (CONTENTION 3.1).

Exelon has failed to comply with its duty under NEPA to "rigorously explore and objectively evaluate all reasonable alternatives" to the granting of the Early Site Permit ("ESP"). 40 C.F.R. 1502.14(a) (Supplemental Request pp. 1-14). Exelon's purported analysis of alternative energy sources is flawed because its Environmental Report ("ER"): (1) assumes, but does not analyze, a need for power, (2) treats each alternative energy source as a discrete alternative rather than in combination, (3) fails to consider energy efficiency alternatives, and (4) relies on flawed and outdated information. Because of these legal and factual shortfalls, the ER improperly rejects better, lower-cost, safer, and environmentally preferable energy efficiency,

renewable energy resource, distributed generation, and "clean coal" resource alternatives to the siting of a new nuclear power plant at the Clinton ESP site.

Because Exelon purports to analyze alternative energy sources in Section 9.2 of its ER, neither the Staff nor Exelon disputes the fact that a consideration of all reasonable alternatives is within the scope of this proceeding.[2] In fact, the Staff does not challenge the admissibility of Petitioners' arguments regarding the need to consider alternative energy sources in combination and Exelon's reliance on flawed and outdated information, and Exelon's arguments to the contrary are unavailing. Both the Staff and Exelon, however, do improperly object to two important portions of Petitioners' Clean Energy Alternatives contention – namely, the need to analyze the need for power and to consider energy efficiency as an alternative. Without the consideration of these two issues, the rigorous and objective consideration of all reasonable alternatives required by NEPA cannot occur.

A. The ER's Analysis Is Improperly Constrained By the Lack of Consideration of the Need For Power

As Petitioners' explained in their Supplemental Request (pp. 4-5), Exelon's ER fails to comply with the requirements of NEPA because it neglects to include an analysis of the need for power. In response, the Staff and Exelon point to 10 C.F.R. 52.17 and 52.18, which provide that an applicant need not consider the need for power during the ESP proceeding. (Staff Response pp. 24-25, Exelon Response p. 19). In addition, Exelon notes that it will eventually consider the need for power during the combined licensing phase. (Exelon Response pp. 19-20).

[2] The Staff does argue that Exelon had the option to defer consideration of alternative energy sources until the construction licensing phase, and that Petitioners' argument that alternative energy sources must be considered now therefore constitutes an impermissible attack on NRC regulations. (Staff Response, pp. 23-24) In support, the Staff points to a proposed rulemaking, 68 Fed. Reg. 40028, 40029 (July 3, 2003). That proposed rulemaking is clearly inconsistent with both NRC regulations, 10 C.F.R. 51.45(b)(3), and NEPA itself which, as Petitioners' explained in their Supplemental Request (p. 3), both clearly require the consideration of renewable energy and energy efficiency alternatives as part of the ESP proceeding. Regardless, because Exelon has elected to address alternative energy sources in its ER, the adequacy of that alternatives analysis is undeniably within the scope of this proceeding.

This response is inadequate for two reasons. First, foreclosure of the consideration of the need for power would conflict with the plain requirements of federal law. In particular, the identification and discussion of the need for a project (here, the need for power) is a required and critical component of the NEPA-required alternative analysis because the need forms the baseline by which the reasonableness of various alternatives are measured. 40 C.F.R. 1502.13; *City of Carmel-By-The-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997); *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 666 (7th Cir. 1997). Certainly, the consideration of the need for power during some later combined licensing proceeding would do nothing to assist in the consideration of alternatives in this proceeding. Therefore, as a matter of law, the need for power must be analyzed as part of the alternatives analysis that is occurring during this ESP proceeding. The NRC must find a way to apply its regulations in a manner consistent with this statutory requirement.

Second, as the Petitioners pointed out (Supplemental Request p. 4, citing ER pp. 9.2-7, 9.2-8), and Exelon did not dispute, Exelon actually has identified a need for power and used that identified need to reject reasonable alternatives. Having identified and relied on a need for power in its alternatives analysis, Exelon cannot avoid an analysis of whether that need for power actually exists. In order to ensure a rigorous and objective analysis of all reasonable alternatives, therefore, the need for power must be analyzed during this proceeding.

B. The ER Must Consider Energy Efficiency and Renewable Energy Resources <u>Both Individually and In Combination</u>

As explained in Petitioners' Supplemental Request (p. 5), Exelon's ER fails to comply with NEPA because it does not consider energy efficiency and various alternative energy

resources in combination. The Staff does not oppose the admission of a contention based on Exelon's failure to consider alternatives in combination.[3]

Exelon offers three responses, none of which undermine the Petitioners' and Staff's determination that this argument is admissible. First, Exelon asserts that it did consider alternative energy sources in combination. (Exelon Response, pp. 20-21) The ER, however, specifically states that the alternatives analysis "should be limited to analysis of single discrete electrical generation sources" and, therefore, that Exelon "has not evaluated mixes of generating sources." (ER, p. 9.2-6). Despite those unambiguous statements in the ER, Exelon now claims that it considered alternatives in combination when, for example, the ER considered wind power "in conjunction with energy storage mechanism." (Exelon's Response, pp. 20-21) Clearly, however, these examples do not constitute the consideration of energy efficiency, wind power, solar power, distributed generation, and "clean coal" technology alternatives in combination that NEPA requires and that the ER acknowledges was not carried out.

Exelon next asserts that it rejected alternatives on environmental or technological grounds, not on the basis that a particular alternative was insufficient to supply the entire energy capacity of a new nuclear power plant. A review of the ER itself, however, shows that assertion to be false. For example, the ER claims that the "wind power equivalent to the proposed [new plant] would require dedication of about 330,000 ac on a greenfield site" and then relies in part on the "amount of land needed" to reject wind power. (ER pp. 9.2-7, 9.2-8). The ER contains a similar analysis of solar power. (ER pp. 9.2-8, 9.2-9) In fact, questions of technological and environmental feasibility are unavoidably intertwined with whether the alternatives are considered individually or in combination. In particular, while it may be technologically unfeasible for a particular alternative energy source to supply all of the power that would be

[3] Except, as discussed in Section I.C, with regards to the energy efficiency alternative.

produced by a new nuclear plant, a mix of various alternative energy sources and energy efficiency efforts would be feasible. The ER, however, does not contain any discussion of such sources in combination.

Finally, Exelon contends that Petitioners have not provided any basis for its contention that a combination of energy efficiency and renewable energy alternatives would be a better, lower-cost, safer, and environmentally preferable alternative to a new nuclear plant. (Exelon Response, p. 22). In reality, Petitioners' Appendix to their Supplemental Request included numerous studies demonstrating that reliance on energy efficiency and various renewable energy sources to satisfy energy needs would be cheaper than new nuclear power, would have substantial economic development benefits, and, unlike the operation of nuclear power plants and the storage of high-level nuclear waste, would not create any significant environmental and safety concerns. (Appendix, Ex. 3-17) Such studies qualify as "specific sources and documents" to support Petitioners' contention. 10 C.F.R 2.309(f)(1).

C. The ER's Rejection of Energy Efficiency Alternatives Is Both Legally and Factually Flawed

Petitioners' Supplemental Request (pp. 5-9) explained how energy efficiency is a viable and cost-effective alternative to new nuclear power that must be considered as a reasonable alternative (both individually and in combination with other alternatives) in this ESP proceeding. The Responses of the Staff and Exelon do not dispute that energy efficiency is a viable and cost-effective way to satisfy future energy needs. Instead, both argue that energy efficiency need not be considered as an alternative because it does not satisfy Exelon's economic goals for this project and because Exelon cannot reasonably be expected to implement energy efficiency efforts. *Citizens Against Burlington v. Busey*, 938 F.3d 190, 198 (D.C. Cir. 1991) (Staff Response p. 26-27, Exelon's Response pp. 22-26). In particular, the Staff and Exelon assert that

because Exelon is a power generating company whose goal is to build a "large scale, highly-reliable, base load energy generation" facility, Exelon need not consider alternatives that do not involve the production and sale of electricity.

NEPA, however, forecloses such blind acceptance of Exelon's stated purpose because this approach would improperly preclude reasonable alternatives. The Staff and Exelon are correct that *Busey* requires the NRC "to take into account the needs and goals of the parties involved in the application." *Busey*, 938 F.2d at 196. Taking into account Exelon's goals, however, is different from wholesale deferral to the applicant's proposed purpose for the project. In fact, the agency carrying out the NEPA review must still ensure that the purpose of the project is defined broadly enough so as to allow for the consideration of reasonable alternatives. *See, e.g., Colorado Environmental Coalition v. Dombeck*, 185 F.3d 1162, 1174-75 (10th Cir. 1999); *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 669 (7th Cir. 1997); *Sylvester v. U.S. Army Corps of Engineers*, 882 F.2d 407, 409 (5th Cir. 1989) ("obviously, an applicant cannot define a project in order to preclude the existence of any alternative sites and thus make what is practicable appear impracticable"); *Cf. Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations* ("*Forty Questions*"), 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").

For example, in *Simmons* the project applicant sought a permit to construct a new reservoir to use as a water supply. The Corps, noting that project applicant's purpose was a single reservoir for its water supply, considered only single source alternatives for providing water to the applicant. The Court reversed, holding that the Corps' blind acceptance of the

applicant's purpose for the project improperly excluded reasonable alternatives involving multiple sources of water. *Simmons*, 120 F.3d at 669.

Exelon's attempt to define the purpose of this project as building new power generation would similarly lead to the improper foreclosure of the consideration of the reasonable alternative of energy efficiency. The siting of a new nuclear power plant in Illinois could only be justified if it is necessary for meeting the future energy needs of Illinois customers. Energy efficiency presents a reasonable alternative to new base load energy generation for meeting those needs. (Supplemental Request pp. 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 (declaring the policy of Illinois "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.* (Energy Policy and Conservation Act). Therefore, in order to comply with NEPA, the NRC must reject Exelon's attempt to define the purpose of the project in a way that would improperly exclude the reasonable energy efficiency alternative.

Exelon is also incorrect in arguing that it need not consider the energy efficiency alternative because Exelon is no longer able to carry out energy efficiency efforts under Illinois's deregulated utility system. In fact, Exelon's subsidiaries such as Commonwealth Edison are still able to implement numerous energy efficiency programs that would help to reduce future energy needs. Exelon's apparent desire not to implement such programs is not sufficient reason to preclude rigorous exploration and objective evaluation of this reasonable alternative. In fact, NEPA requires 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) (holding that Department of Interior had satisfied its duty under NEPA to consider increased fuel efficiency standards as an alternative to its 5-year plan for offshore oil and gas leasing activity in environmentally sensitive areas).

D. The ER's Rejection of Renewable Energy Resources Is Factually Flawed and Relies on Outdated Information

Finally, as discussed in Petitioners' Supplemental Request (pp. 9-14), the ER improperly relied on flawed and outdated information to reject reasonable alternatives such as wind, solar, and distributed generation. The Staff does not oppose admission of this contention with regards to the flawed analysis of wind and solar power in the ER. (Staff Response p. 27). Contrary to the Staff's claim, the Petitioners have also demonstrated a genuine dispute with regards to the ER's analysis of distributed generation. In particular, the ER relies on outdated data from the NRC's 1996 Generic Environmental Impact Statement for License Renewals (Supplemental Request p. 10) rather than more recent data referenced in Petitioners' Supplemental Request (pp. 13-14). In addition, the ER fails to consider distributed generation in combination with energy efficiency and other clean energy resources. (Supplemental Request p. 14).

Exelon fails to even dispute the fact that it relied on outdated and flawed information and, instead, simply asserts that Petitioners have failed to demonstrate that wind, solar, and distributed generation are viable alternatives. (Exelon Response pp. 26-28) As Petitioners have explained above and in their Supplemental Request, however, Exelon's rejection of alternatives was legally flawed because the ER assumes but does not justify a need for power, sets forth an improper purpose and need, and fails to consider energy efficiency and renewable energy alternatives in combination. Petitioners have also submitted numerous studies demonstrating that energy

efficiency and renewable energy alternatives, individually and in combination, are better, cheaper, safer, and less environmentally risk alternatives to new nuclear power. (Supplemental Request Appendix Ex. 3-17) In fixing the flaws in the ER and carrying out a proper alternatives analysis, Exelon and the NRC must rely on up-to-date and accurate information, something that Exelon does not dispute it has not done in the ER. *Cf. Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council,* 435 U.S. 519, 552-553 (1978) (recognizing that the concept of alternatives is an "evolving one" that an agency must judge "by the information then available to it.")

II. THE RULEMAKING HISTORY FOR THE WASTE CONFIDENCE RULE DEMONSTRATES THAT THE RULE DOES NOT APPLY TO THE PROPOSED NEW CLINTON NUCLEAR POWER PLANT (CONTENTION 3.2)

Contention 3.2 asserts that the ER for the Clinton ESP application is deficient because:

> it fails to discuss the environmental implications of the lack of options for permanent disposal of the irradiated (*i.e,* "spent") fuel that will be generated by the proposed new Clinton nuclear plant if it is built and operated. Nor has the NRC made an assessment on which Exelon can rely regarding the degree of assurance now available that radioactive waste generated by the proposed reactors "can be safely disposed of [and] when such disposal or off-site storage will be available." Final Waste Confidence Decision, 49 Fed. Reg. 34,658 (August 31, 1984), citing *State of Minnesota v. NRC,* 602 F.2d 412 (D.C. Cir. 1979). Accordingly, the ER fails to provide a sufficient discussion of the environmental impacts of the proposed new nuclear reactors.

(Supplemental Request, p. 14). Both Exelon and the Staff oppose admission of the contention.

Exelon and the Staff argue that the language and history of the Waste Confidence rulemaking show that the rulemaking's findings apply to spent fuel generated by any reactor, including advanced reactors. (Exelon Response p. 31, Staff Response p. 30). The Staff quotes 10 C.F.R. § 51.23, which states that if necessary, spent fuel in "any reactor" can be stored safely and without significant environmental impacts; and that sufficient repository capacity will be available within 30 years beyond the licensed life for operation of "any reactor" to dispose of the

commercial high-level waste and spent fuel originating in such reactor and generated up to that time.[4]

Petitioners respectfully submit that Exelon and the Staff are in error. While the Staff correctly states that the language of 10 C.F.R. § 51.23 itself is not qualified, the supporting Waste Confidence rulemaking history makes clear that the finding of no significant impact that is embodied in 10 C.F.R. § 51.23 is limited to the spent fuel generated by any *existing* reactor. In the 1984 Waste Confidence Rule, for example, the Commission stated that:

> [i]n its Notice of Proposed Rulemaking, the Commission stated that the 'purpose of this proceeding is solely to assess generally the degree of assurance now available that radioactive waste can be safely disposed of, to determine when such disposal or off-site storage will be available, and to determine whether radioactive waste can be safely stored on-site *past the expiration of existing facility licenses until off-site disposal or storage is available.*'

Final Waste Confidence Rule, 49 Fed. Reg. 34,659 (August 31, 1984) (emphasis added). Thus, Finding 2 stated that:

> [t]he Commission finds reasonable assurance that one or more mined geologic repositories for commercial high-level radioactive waste and spent fuel will be available by the year 2007-09, and that sufficient repository capacity will be available within 30 years beyond expiration of *any* reactor operating license to dispose of *existing commercial high level radioactive waste and spent fuel* originating in such reactor and generated up to that time.

49 Fed. Reg. at 34,659-60 (emphasis added).

Consistent with this limitation, the Commission's evaluation of the adequacy of repository capacity to accommodate spent fuel and high-level commercial nuclear waste was limited to the waste generated by existing reactors. The Commission estimated the amount of spent fuel and other high-level waste that would be generated by the existing generation of

[4] The Staff claims that Petitioners attack 10 C.F.R. § 51.23, and that such an attack is barred by operation of 10 C.F.R. § 2.335(a). (Staff Response p. 29). The Staff misconstrues the contention. Petitioners do not seek to attack the regulation. Rather, Petitioners seek to show that the factual finding of no significant impact codified by Section 51.23 is inapplicable to the proposed ESP application.

nuclear power plants, and compared it to the capacity of two hypothetical repositories that could each hold 100,000 metric tons of high level waste. 49 Fed. Reg. at 36,679.[5] Thus, in the 1984 rule, the phrase "any reactor" clearly meant any existing reactor.

In the 1990 update to the Waste Confidence Rule, the Commission noted several recent developments, including the fact that a number of licensees had requested license renewal. 55 Fed. Reg. at 38,506. Therefore, the Commission changed Finding 2 to address that development, among others:

> [t]he Commission finds reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century, and that sufficient repository capacity will be available within 30 years beyond the licensed life for operation (*which may include the term of a revised or renewed license*) of any reactor to dispose of the commercial high-level radioactive waste and spent fuel originating in such reactor and generated up to that time.[6]

55 Fed. Reg. at 38,474 (emphasis added). In order to support Finding 2, the Commission evaluated repository capacity in light of anticipated reactor lifetime extensions and license renewals. 55 Fed. Reg. at 38,501. In light of the NWPA's capacity limit on the first repository of 70,000 MTHM, the Commission found that "two repositories will be needed to dispose of all the spent fuel and high-level waste from the current generation of reactors" unless Congress lifts the 70,000 MTHM limit. 55 Fed. Reg. at 38,502. *Id.* The Commission did not say that it anticipated receipt of applications for licensing of a new generation of reactors; nor did it

[5] At that time, the siting of a second repository was required by the Nuclear Waste Policy Act ("NWPA") of 1982. *See* Waste Confidence Decision Review, 55 Fed. Reg. 38,474, 38,501 (September 18, 1990) (hereinafter "1990 Waste Confidence Review"). The NWPA of 1982 also required DOE to nominate five sites considered suitable for repository development. 1984 Waste Confidence Rule, 40 Fed. Reg. at 34,678. In May 1986, however, DOE indefinitely postponed siting of a second repository, based on (1) "decreasing forecasts of spent fuel discharges," and (2) "estimates that a second repository would not be needed as soon as originally supposed." In 1987, Congress amended the NWPA to terminate all site-specific activities related to a second repository unless specifically authorized by Congress. 1990 Waste Confidence Revision, 55 Fed. Reg. at 38,501.

[6] The 1990 version of Finding No. 2 also reflects the Commission's decreased certainty regarding the timing of the opening of a second repository, in light of Congress' decision to suspend the siting process for a second repository. 55 Fed. Reg. at 38,494. *See also* note 5, *supra*. In contrast to the 1984 finding that "one or more" repositories would be available between 2007-09, the 1990 finding states that "at least one" repository will be available in the first quarter of the 21st century.

evaluate the additional quantity of spent fuel and high-level waste that would be generated by a new generation of nuclear reactors.

Exelon and the Staff attribute significance to a statement in the 1990 Waste Confidence Review that:

> [t]he availability of a second repository would permit spent fuel to be shipped offsite well within 30 years after expiration of these reactors' OLs. The same would be true of the spent fuel discharged from any new generation of reactor designs.

(Exelon Response p. 30, Staff Response p. 31 n. 22, *citing* 55 Fed. Reg. at 38,504). This statement must be evaluated in the context in which it was made. With respect to Finding 2, the Commission posed the rhetorical question:

> Is there sufficient uncertainty in total spent fuel projections (*e.g.*, from extension-of-life license amendments, renewal of operating licenses for an additional 20 to 30 years, or a new generation of rector designs) that this Waste Confidence review should consider the institutional uncertainties arising from having to restart a second repository program?

55 Fed. Reg. at 38,501. In response to that question, the Commission engaged in a discussion of what would be the earliest date a second repository would be needed in order to accommodate the spent fuel and high-level waste generated by the current generation of nuclear power plants, including renewed licenses:

> License renewals would have the effect of increasing requirements for spent fuel storage. The Commission understands that some utilities are currently planning to seek renewals for 30 years. Assuming for the sake of establishing a conservative upper bound that the Commission does grant 30-year license renewals, the total operating life of some reactors would be 70 years, so that the spent fuel initially generated in them would have to be stored for about 100 years if a repository were not available until 30 years after the expiration of their last OLs.
>
> Even under the conservative bounding assumption of 30-year license renewals for all reactors, however, if a repository were available within the first quarter of the twenty-first century, the oldest spent fuel could be shipped off the sites of all currently operating reactors well before the spent fuel initially generated in them reached the age of 100 years. Thus, a second repository, or additional capacity at the first, would be needed only to accommodate the additional quantity of spent fuel generated during the later years of those reactors' operating lives. The availability of a second repository would permit

> spent fuel to be shipped offsite well within 30 years after expiration of these reactors' OLs. The same would be true of the spent fuel discharged from any new generation of reactor designs.
>
> *In sum, although some uncertainty in total spent fuel projections does arise from such developments as utilities' planning renewal of OLs for an additional 20 to 30 years, the Commission believes that this Waste Confidence review need not at this time consider the institutional uncertainties arising from having to restart a second repository program.* Even if work on the second repository program is not begun until 2010 as contemplated under current law, there is sufficient assurance that a second repository will be available in a timeframe that would not constrain the removal of spent fuel from any reactor within 30 years of its licensed life for operation.

55 Fed. Reg. at 38,504 (emphasis added). Thus, the Commission's concern in this discussion was the earliest date when a second repository might be needed, not the capacity of the repositories to accommodate spent fuel or high level waste. The Commission mentioned spent fuel from advanced reactors as the most extreme example of a circumstance in which the timing of the availability of a second repository would come into play. The Commission did not provide any information or express any opinion regarding the capacity of a first or second repository to accommodate the spent fuel or high-level waste generated by a new generation of reactors. Nor did the Commission make any other mention of advanced reactors in the 1990 Federal Register notice.[7]

Accordingly, Exelon's and the Staff's arguments that the findings of the Waste Confidence Rule are broad enough to encompass fuel generated by advanced reactors finds no support in the history of the Waste Confidence Rulemaking. Neither the 1984 Waste Confidence Rule nor the 1990 Waste Confidence Decision Review contains any analysis of the capacity of a

[7] It should also be noted that if the combined capacity of a first or second repository is insufficient to accommodate advanced reactor spent fuel and high-level radioactive waste, then the timing of the availability of a second repository would be irrelevant. Similarly irrelevant would be the Commission's expression of confidence in the 1990 Waste Confidence Review that if the need for a second repository were established, Congress would provide "the needed institutional support and funding." *See* 55 Fed. Reg. at 38,502. If the capacity of the first two repositories for advanced reactor spent fuel and high level waste cannot be established, then the Commission would need to evaluate the timing and feasibility of opening a third repository.

first or second repository to accommodate spent fuel or high level radioactive waste generated by a new generation of advanced reactors.[8]

In the absence of such an analysis, it must be concluded that the Waste Confidence rulemaking does not apply to this proceeding. Therefore, the NRC cannot rely on the finding embodied in 10 C.F.R. § 51.23 to preclude consideration of the environmental impacts of extended onsite storage of spent fuel and other high-level radioactive waste generated by the proposed Clinton advanced reactors. Under 10 C.F.R. §§ 51.45 and 52.18 and the applicable provisions of 10 C.F.R. Part 51, the NRC must evaluate the environmental impacts of extended spent fuel storage on the Clinton site. This is a site-related environmental impact and therefore must be evaluated at the ESP stage, rather than being postponed until the construction permit or operating license stage. The Commission may choose whether to evaluate the environmental impacts of extended spent fuel storage at the Clinton site in this licensing proceeding or in a generic rulemaking; but in order to comply with NEPA and the Commission's implementing regulations, it must do so before any ESP for the Clinton site is issued. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (NEPA requires federal agencies to examine the environmental consequences of their actions *before* taking those actions, in order to ensure "that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast")

[8] The Commission issued a status report in 1999, but it did not change any of the findings of the 1990 review. Waste Confidence Decision Review, 64 Fed. Reg. 68,005 (December 16, 1999).

III. THE PETITIONERS' ILLINOIS STATE MORATORIUM CONTENTION IS WITHIN THE SCOPE OF THIS PROCEEDING BECAUSE THE MORATORIUM FORECLOSES THE ISSUANCE OF AN EARLY SITE PERMIT BY DEEMING IMPROPER FOR A NEW NUCLEAR POWER PLANT ALL SITES IN ILLINOIS (CONTENTION 5.1).

As Petitioners explained in their Supplemental Request (pp. 18-21), the issuance of an ESP for the Clinton site is foreclosed by the Illinois state moratorium on new nuclear power plants. Illinois law provides that no new nuclear power plants can be located in Illinois until such time as the Director of the Illinois Environmental Protection Agency ("IEPA") finds that the United States government has identified and approved a demonstrable technology or means for the disposal of high-level nuclear waste. 220 ILCS 5/8-406(c). Unless and until the IEPA makes the determination necessary to lift the moratorium, the Clinton site (or any other site in Illinois) is legally inappropriate for a new nuclear power plant. Neither the Staff nor Exelon dispute that the IEPA has not made the requisite finding to lift the moratorium. Therefore, the NRC must deny Exelon's ESP application.

The Staff responds that Petitioners' moratorium contention is outside the scope of this ESP proceeding because it involves the "litigation and resolution of controversies about other agencies' permitting authority." (Staff Response, p. 34) According to the Staff, NRC consideration of the moratorium would interfere with the permitting authority of state agencies, just as if the NRC were to determine whether an applicant needed to obtain a Clean Water Act permit. (*Id.*) The Staff's claims of interference, however, are unfounded – the NRC's recognition that the moratorium prohibits the siting of a new nuclear power plant in Illinois obviously does not interfere with such prohibition. Contrary to the Staff's assertion, there is no state permitting authority here for the NRC to interfere with. The IEPA is charged with deciding whether or not to lift the moratorium in the future, but certainly that decision would not be

interfered with by the NRC's recognition that it cannot issue an ESP unless and until the IEPA lifts the moratorium. In fact, the interference that the Staff purports to be concerned about could occur only if the NRC ignores the moratorium and sites a new nuclear power plant in Illinois despite Illinois's clear prohibition of such siting.

Exelon's response to the moratorium contention also fails to demonstrate that the contention is inadmissible. Exelon argues that the moratorium applies only to construction, rather than siting, of a new nuclear power plant. (Exelon Response, pp. 35-36). In fact, by its specific terms the moratorium prohibits not only "construction," but also the issuance of a "certificate of public convenience and necessity or other authorization." 220 ILCS 5/8-406(c). In addition, the clear legal import of the moratorium was to prohibit any new nuclear power plants in the state until the high-level waste disposal problem is solved. Therefore, unless and until the IEPA lifts the moratorium, the NRC cannot determine that the Clinton site (or any other site in Illinois) is appropriate for a nuclear power plant.

Exelon also challenges the correctness of Petitioners' contention that the moratorium bars the issuance of this ESP. In particular, Exelon argues that the moratorium does not bar this ESP because the moratorium could be lifted before the 20 year ESP expires. (Exelon Response, pp. 36-37) In support, Exelon asserts that the Yucca Mountain high level waste repository could receive NRC approval as early as 2008, and that such approval would necessitate lifting the moratorium.

This Exelon argument does not show that the moratorium contention is immaterial or beyond the scope of this proceeding and, hence, inadmissible. Instead, Exelon's argument suggests, at most, that there are genuine legal and factual disputes regarding the impact of the moratorium on this proceeding. 10 C.F.R. 2.309(f)(1)(iii)-(iv).

In addition, Exelon's legal and factual challenges to Petitioners' moratorium contention are wrong for three reasons. First, the fact that the moratorium may be lifted sometime in the future is legally irrelevant. The NRC must decide whether the Clinton site is currently an appropriate site for a new nuclear power plant, not whether the site might be appropriate at some undetermined time in the future. Illinois law currently makes the Clinton site inappropriate for an ESP – should the Illinois law change, then Exelon can seek to prove that the site is appropriate.

Second, Exelon's claim that the Yucca Mountain repository may be approved by 2008 is factually unsupported. As Petitioners noted in the Supplemental Request (p 17 n. 26, 20), the Department of Energy ("DOE") has not even submitted its application for Yucca Mountain to the NRC. While DOE continues to predict that the Yucca Mountain repository will open in 2010, the General Accounting Office recently concluded that the repository could not open until at least 2015. Even that date is doubtful, given the serious technical criticism of DOE's current repository design and current and likely future legal challenges.

Third, the opening of the Yucca Mountain site would not justify the lifting of the moratorium because Yucca Mountain would not have sufficient capacity to store waste from a new Clinton 2 nuclear power plant. (Supplemental Request, pp. 15-16 & n. 23) Certainly, a repository without the capacity to store waste from a new Clinton 2 nuclear power plant does not constitute a "technology or means for the disposal of high level nuclear waste" from such plant. 220 ILCS 5/8-406(c). Therefore, the opening of the Yucca Mountain repository would not cause the legally binding moratorium to be lifted.[9]

[9] The NRC need not decide whether or not the opening of Yucca Mountain would satisfy the requirements for lifting the Illinois moratorium. The point here is simply that there is no certainty that the IEPA would decide to lift the moratorium if and when Yucca Mountain opens. Therefore, the NRC cannot avoid the legal prohibition to the

IV. CONCLUSION

The Staff and Exelon Responses fail to demonstrate that the Petitioners' Clean Energy Alternatives, Waste Confidence Rule, and Illinois State Moratorium contentions are inadmissible under 10 C.F.R. 2.309(f). The record demonstrates that the named Petitioners have standing in this proceeding and have raised admissible contentions. Therefore, the Nuclear Regulatory Commission should grant the Petitioners' request for a hearing and petition to intervene in this proceeding.

Dated: June 9, 2004

Respectfully Submitted,

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issuance of the ESP presented by the moratorium by assuming in this proceeding that the moratorium would be lifted before a Clinton ESP would expire.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD PANEL

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

CERTIFICATE OF SERVICE

I, Shannon Fisk, hereby certify that copies of the Reply in Support of Supplemental Request For Hearing and Petition to Intervene by the Environmental Law and Policy Center, Blue Ridge Environmental Defense League, Nuclear Information and Resource Service, Nuclear Energy Information Service, and Public Citizen in the above captioned proceeding have been served on the following via electronic mail and by Federal Express overnight delivery or U.S. mail, first class, on this 9th day of June, 2004.

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