

LevyCEm Resource

From: Michael Hubbard [mshubb1@yahoo.com]
Sent: Tuesday, October 26, 2010 8:05 AM
To: LevyColeis Resource
Subject: Levy County Units 1 & 2 - USACE PIR
Attachments: MSH to NRC - PIR.pdf

Please find attached:

Comments to Levy County Units 1 & 2 - USACE Public Interest Review
Federal Register, 13 August 2010, Page 49539
Docket Nos. 52-029 & 52-030

Michael S. Hubbard

Federal Register Notice: 75FR49539
Comment Number: 20

Mail Envelope Properties (863578.52800.qm)

Subject: Levy County Units 1 & 2 - USACE PIR
Sent Date: 10/26/2010 8:05:01 AM
Received Date: 10/26/2010 8:05:11 AM
From: Michael Hubbard

Created By: mshubb1@yahoo.com

Recipients:
"LevyColeis Resource" <LevyColeis.Resource@nrc.gov>
Tracking Status: None

Post Office: web38102.mail.mud.yahoo.com

Files	Size	Date & Time
MESSAGE	195	10/26/2010 8:05:11 AM
MSH to NRC - PIR.pdf	91463	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

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26 October 2010

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
via e-mail to: Levy.COLEIS@nrc.gov

Re: Comments to Levy County Units 1 & 2 – USACE Public Interest Review
Federal Register, 13 August 2010, Page 49539
Docket Nos. 52-029 and 52-030

Dear Review Team:

The following are comments for the U.S. Army Corps of Engineers (USACE) regarding the Public Interest Review (PIR) for the proposed Levy Nuclear Plant (LNP).

I. EXTENT OF NEED

It is entirely possible, if not probable, that the proposed LNP's nuclear reactors would become liabilities before completing their expected operational life due to rapid development of renewable energy technology. There is no argument that a need for additional power generation exists, but other methods of generation are more flexible and the amount of power needed from a centralized source is in question. The need for two large nuclear reactors is questionable because, taken together, actions to conserve energy in existing and new homes and buildings, increased centralized and distributed wind power generation, and distributed solar generation can substantially reduce the future need for a large centralized generation project such as the proposed LNP.

Since the DEIS did not consider decentralized power generation at all, USACE should consider, at the very least, that two new large nuclear reactors is at least one too many based on future needs and expected development of renewable, distributed power generation. The feasibility of utilizing distributed, renewable energy sources is thoroughly examined in "Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy" by Dr. Arjun Makhijani. I encourage USACE to utilize this short book as a source for the Public Interest Review. A free download of the book is available at: www.ieer.org/carbonfree/CarbonFreeNuclearFree.pdf

II(A). PRACTICABILITY OF ALTERNATIVE LOCATIONS

Both USACE regulations [33 CFR 320.4(l)(2) and (3)] and Executive Order 11988 discourage USACE from authorizing development of projects on floodplains. The DEIS discusses replacement of altered floodplain retention, but does not justify that construction on the floodplain is necessary because no other location for the project is suitable. Specifically, the DEIS does not adequately support that construction of the LNP at the Crystal River Energy Complex (CREC) would not satisfy the needs of the proposed project. PEF, Florida's Department of Environmental Protection (FDEP), and NRC appear to have all but ignored USACE strictures regarding development on a floodplain, as well as an Executive Order prohibiting such development in most cases.

While NRC must prove “obviously superior” environmental affects to supplant PEF’s preferred site location, USACE is not authorized to grant a permit unless the preferred site is determined to represent the Least Environmentally Damaging Practicable Alternative (LDEPA). Despite dozens of pages supporting PEF’s preferred site location over the alternatives, it is difficult to imagine how construction on a previously existing industrial site (i.e., CREC) would not represent a less damaging alternative compared to constructing a new facility at a greenfield site located on a floodplain.

II(B). PRACTICABILITY OF ALTERNATIVE METHODS

Generation Efficiency

The DEIS does not address efficiency of nuclear power generation compared to other power generation alternatives that generate waste heat. According to Makhijani 2007 (p.101):

The efficiency of thermal power plants is highly variable in practice. It ranges from a low of 15 or 20 percent for geothermal energy to about 33 percent for nuclear power plants, about 40 percent for new coal-fired power plants, and 55 percent for natural-gas-fired combined cycle plants.

While little is yet being said about the contribution of waste heat to oceans, lakes, rivers, and the atmosphere as contributors to global warming, waste heat contribution is globally significant and will be recognized as a global warming issue. Given that natural gas-fired combined cycle generation is at this time the most efficient type of thermoelectric power generation, and that a major natural gas supply line is so close to the proposed LNP facility location, justification of two large nuclear reactors over a natural gas-fired combined cycle facility is not provided in the DEIS.

Transportation

The DEIS in no way accounts for the cumulative effects of transporting radioactive new and spent fuels on our highways. A crude assessment by Hubbard 2010, estimates that there could be, on average, up to 7000 trucks per year carrying new and spent fuels on public highways, exposing individuals living near these highways to radiation, as well as those unfortunate enough to be traveling those same highways at the time, or visiting vehicle rest and refueling facilities. The assessment did not account for radioactive waste other than spent fuels that are also generated at nuclear power plants, shipment of radioactive wastes from decommissioned facilities, or the shipment of any new or waste radioactive material for military purposes. Therefore, 7000 trucks per year hauling nuclear materials on our highways could be a significant under-estimation of the actual shipping volume.

It should be noted that none of the other generation methods considered in the DEIS pose the threat of radioactive exposure to public due to transportation of fuels and wastes. A natural gas supply line already exists near the proposed LNP site, meaning that natural gas-fired power generation would not include impacts from transportation of fuel, such as coal or nuclear. Since the DEIS does not include a cumulative impact analysis for the shipment of fuels and wastes, USACE should consider both the cost of shipping fuels and wastes with the economic evaluation and the radiation exposure due to shipping new and spent nuclear fuels for the proposed LNP in the Public Interest Review.

Economics

According to 33 CFR 320.4(q), USACE “may make an independent review of the need for the project from the perspective of the overall public interest.” USACE is strongly encouraged to perform such an independent review because NRC failed to create an unbiased DEIS that considered actual costs to construct and decommission the proposed project, adequately consider costs of transporting radioactive materials, ignored future public restoration project

costs, and ignored the rising cost of construction materials and the affect of customary delays in large construction projects in general, and of nuclear power plants in particular. Already the proposed LNP is behind the schedule used to estimate construction costs, and this schedule is likely to be further delayed due to contentions granted to be heard in a Petition to Intervene in the COL application by the Atomic Safety Licensing Board (ASLB), and because the DEIS was so incomplete that a supplemental DEIS and public comment period is probable.

Many sources representing expert studies are available which support the conclusion that nuclear power generation is the costliest form of providing electrical power and poses unsupportable financial risks. These include:

Moody's Investor Service, 2009, "New Nuclear Generation: Rating Pressure Increasing." According to the Moody's report, PEF's credit rating, as a result of proposing the construction of nuclear power plants, is between Baa1 and Baa3 – one step above junk status.

The Massachusetts Institute of Technology (MIT), 2009, "Update to the MIT 2003 Future of Nuclear Power Study." The study concludes that costs for constructing nuclear power plants have risen 15 percent per year since 2003, that construction of nuclear power plants was still higher than that of coal or natural gas-fired plants, and that progress on high-level waste disposal since 2003 has not been positive.

Actual costs for constructing the proposed LNP are not even known at this time because PEF has not chosen a source for obtaining service water. It may be that an alternative water supply, instead of utilizing the Upper Floridan aquifer, will be required. This would greatly increase the cost of constructing and operating the proposed LNP because no alternative source of water has proven to be inexpensive compared to groundwater pumping.

Additionally, the Withlacoochee River Basin Board plans to restore historical flows in the area and the Circulating Water Intake System (CWIS) appears to be located in an area that would conflict with this restoration effort. It appears that PEF, NRC, and FDEP have ignored long-range public planning efforts in locating the proposed project. Conflicts with regional restoration efforts and the cost of moving the CWIS, which PEF would pass on to ratepayer, should be included in the Public Interest Review.

USACE should also consider that the costs and environmental impacts of nuclear power generation are basically unknown. Dr. Arjun Makhijani makes the following conclusions about generic impacts and costs contained in NRC's Waste Confidence decision (10 CFR 51.23) and Table S-3 (10 CFR 51.51) regarding final geologic burial of high-level wastes and environmental data for the uranium fuel cycle:

Table S-3 is obsolete and/or wrong in its legal, technical, environmental and health assumption and estimates in regard to spent fuel, gaseous releases from spent fuel, GTCC wastes [greater than Class C], Class A, B, and C low-level waste, DU [depleted uranium], radon-222, and carbon-14. In light of more rigorous requirements for waste management and the fact that repository costs have escalated without a repository having been commissioned as previously envisaged, a thorough revision of the cost basis of nuclear power in regard to its waste aspects is also needed. This is essential because without such estimates, the costs of nuclear energy with alternative options cannot be fairly made. [Makhijani 2009, p. 45]

Allowing the LNP to be constructed as proposed adversely affects public interest because nuclear power is more costly to construct, more costly to dispose of radioactive wastes, and far more costly to decommission. The nuclear power option results in transportation costs much

higher than other power generation options and creates wastes that will result in human exposure for thousands or tens of thousands of years.

III(A). EXTENT AND PERMANENCE OF BENEFITS

Benefits of the proposed LNP project include electricity for 40 to 60 years with routine and accidental radioactive releases during operation and decommissioning that may offset, to all or some extent, the single benefit of nuclear power: that is, fewer of the standard power plant air pollutants, including carbon dioxide. However, the permanence of the radioactive waste is ONE MILLION YEARS.

III(B). EXTENT AND PERMANENCE OF DETRIMENTS

Use of uranium fuel results in low-level exposure from every step in the process: mining the ore, transporting ore, processing and packaging, shipment to reactors, use as fuel resulting in routine and accidental releases, onsite spent fuel storage, transporting spent fuels to repository, and we are learning that repositories will also introduce radioactivity into the environment. Additionally, accidents can result in low-level exposures and have potential for high-level exposures covering broad areas. No other generation option comes with such a cost to human health.

Water consumption

Nuclear power uses more water than all other alternative energy sources thus far proposed for the LNP. USACE is required at 33 CFR 320.4(m) to consider water conservation, actions which significantly affect water availability for alternative uses, and opportunities to reduce demand. Authorizing a nuclear power plant that will likely operate for 60 years does not comply with any of the requirements of §320.4(m).

There are also the consideration of impacts from groundwater pumping, the reduction of freshwater input into the estuary, and the adoption of Minimum Flow Levels in the area that render the viability of the proposed LNP questionable in light of federal and state regulations.

Radioactive waste impacts

The bane of nuclear power is the radioactive exposure and toxic waste produced in every step of the uranium fuel cycle, and especially the high-level wastes that can remain radioactive for one million years. We do not have the technology to build containment that is guaranteed to endure anywhere near that long.

NRC has not proven in its Waste Confidence Rule (10 CFR 51.23) that safe disposal of spent fuel in a geologic repository is technically feasible [Makhijani 2009]. Therefore, NRC's reliance on the assumption of zero radioactive releases in Table S-3, Table of Uranium Fuel Cycle Environmental Data [10 CFR 51.51] is unrealistic. Since long-term storage of radioactive wastes has resisted solution, increasing the amount of such wastes would only compound the problem and, thus, would not be in the public's best interest.

The general public will, to a large extent, pay for the disposal of 63,000 metric tons (69,460 U.S. tons) estimated by DOE to exist by 2010, and is estimated by DOE to be 105,000 metric tons (115,760 U.S. tons) by 2046.

Creating highly toxic wastes for which no means of safe disposal exists also violates the ethical construct of Intergenerational Equity – that is, the foisting of problems we cannot resolve today onto future generations instead of opting not to create the problem in the first place. This ethical

principle is a key element of long-term public interest that has not received the attention it should with regard to nuclear power, mainly because the public has not been well informed as to the technical infeasibility of safely storing high-level radioactive wastes. I urge USACE to utilize the concept of Intergenerational Equity when balancing benefits and detriments of the proposed LNP for public interest.

Since no long-term repository exists, and is not likely to exist for several decades, high-level radioactive wastes are generally stored at the nuclear plant where they were generated, scattered across the nation. This creates the potential for accidents and terrorist strikes. The transportation of new and spent fuels also creates opportunities for accidents and terrorist attack. Obviously, creating more potential for accidents or attack, by authorizing new nuclear power plants, would not be considered as being in the public's best interest.

The risks of radiation exposure were not considered as cumulative impacts in the DEIS and, therefore, should be considered by USACE in the Public Interest Review. NRC has proven itself a master of compartmentalization in the proposed LNP DEIS. Radiation exposure is presented for various actions and activities, but is never expressed as an additive, cumulative dose. Even dosage amounts from the reactors themselves are provided for a single unit, seldom as an additive amount from both proposed units. NRC never provides a cumulative dose amount for reactor operation, transportation of new and spent fuels, onsite long-term storage, and decommissioning activities.

Past spills and releases are not included in any cumulative analysis provided by NRC. Background radiation now includes radiation from past above-ground nuclear detonations and the widespread radioactive releases from the Chernobyl accident. NRC's requirements for both routine and accidental radiation releases are very loosely regulated regarding methodologies and reporting requirements. It appears that NRC is very casual about incremental increases in radiological exposures to humans and biota.

The fact is, every increment of radiation exposure, no matter how small, produces a corresponding and proportional increment of cancer risk. NRC has, incredibly, promulgated regulations which expressly forbid a true cumulative impacts analysis of radiation exposure. Releases from geologic repositories are considered outside of NRC's purview, Table S-3 is required by regulation to be used in lieu of site-specific conditions, no consideration of radioactive exposures by the military are included in ANY cumulative impacts analysis, and radioactive exposure due to sources outside the United States are never considered.

In the DEIS, NRC consistently compares radiation exposure from various activities to background radiation levels, typically presenting exposures from an activity as a fraction of "natural" background levels. This represents flawed logic because radiation exposure risk is additive. The exposure risk should be presented as the background level plus the exposure amount from the activity. There is no threshold below which radiation exposure has zero risk.

The Public Interest Review should consider risks in terms of voluntary and involuntary radiologic exposure. Man-made radiation exposure has been imposed on the public without the full and informed consent of that public. USACE is not bound to the strictures NRC has placed on itself and should consider public interest in terms of cumulative exposure risk, public safety in light of known terrorist intents, and Intergenerational Equity.

The DEIS is so incomplete that adverse impacts from the proposed LNP could not be quantified due to failure to determine service water source and the amount of drawdown impacts and failure to consider loss of freshwater input into the estuary system, among other exclusions and

misrepresentations. The PIR should, therefore, be delayed until a Supplemental DEIS is issued. According to 33 CFR 320.4(a)(1), probable impacts, including cumulative impacts, of the proposed activity are to be the basis of whether to issue a permit. The DEIS is incomplete and does not provide ample quantification of impacts or cumulative impacts and should not be used as a basis for the PIR until completed.

USACE is required to consider the extent and permanence of benefits and detriments of any proposed project. The benefit of electric power for 60 years should not outweigh the generation of thousands of tons of radioactive waste for which no option for safe disposal has gained public or political/financial support. Creating such potent and long-lasting radioactive wastes without a valid plan for disposal violates the ethics and morals of Intergenerational Equity. I encourage USACE to have the courage to say so publicly.

Thank you for considering my comments.

Sincerely,

Michael S. Hubbard

CITATIONS

[Hubbard 2010] Hubbard, M.S. 2010. Comments to Levy County Units 1 and 2 Draft Environmental Impacts Statement. 26 October 2010.

www.hubb1aventuras.com/uploads/MSH_to_NRC_-_LNP_DEIS_Comments.pdf

[Makhijani 2007] Makhijani, A. 2007. *Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy*. Tacoma Park, Maryland, IEER Press/Muskegon, Michigan, RDR Books.

[Makhijani 2009] Makhijani, A. 2009. Comments of the Institute for Energy and Environmental Research on the U.S. Nuclear Regulatory Commission's Proposed Waste Confidence Rule Update and Proposed Rule Regarding Environmental Impacts of Temporary Spent Fuel Storage. Accessed October 2010. www.ieer.org/comments/WasteConfidenceComments2009.pdf