United States of America
Nuclear Regulatory Commission

Atomic Safety and Licensing Board

Before Administrative Judges:

Alex S. Karlin, Chair
Dr. Anthony J. Baratta
Dr. William M. Murphy

In the Matter of: PROGRESS ENERGY FLORIDA, INC. Combined License Application for Levy County Units 1 & 2	Dockets Numbers 52-029-COL and 52-030-COL November15, 2010

INTERVENERS' RESPONSE TO PROGRESS ENERGY'S MOTION FOR SUMMARY DISPOSITION OF CONTENTION 4 (ENVIRONMENTAL IMPACTS OF DEWATERING AND SALT DRIFT) WITH REGARD TO SALT DRIFT AND PASSIVE DEWATERING

I. INTRODUCTION

PEF is seeking to have two aspects of Contention 4- salt drift and passive dewatering stripped from the Contention admitted in the original ruling by the Board. Simultaneously, PEF seeks to have another major issue, active dewatering, eliminated via a Motion to Dismiss as Moot. This divide and conquer strategy is in play in spite of the fact that the underlying issues are not adequately addressed in the DEIS, or by PEF. Interveners contend that passive dewatering will take place at Levy, and that the impacts of that dewatering will be LARGE. Salt drift, while addressed by the DEIS, is understated and inadequately quantified, and the effects are much larger than admitted by PEF and NRC Staff. Interveners intend to show in these proceedings that the individual effects of salt drift and dewatering have been downplayed through faulty reasoning, imprecise data, and false suppositions. While there are obvious failures in determining the individual impacts, there has been woefully inadequate effort in determining the cumulative effects.

II. PROCEDURAL BACKGROUND

Interveners wish to dispose immediately with misrepresentations of Contention 4 in both Staff's Answer and PEF's Motion.

Interveners dispute the Staff's statement (Staff Answer at 3) that the Board *defined* passive dewatering as "non-mechanical dewatering related to surface impoundments." The Board used e.g., not i.e., "C4D focuses on the alleged inadequacy of the ER's discussion of the onsite and offsite impacts of dewatering, both active (**e.g.**, pumping and use of groundwater) and passive (**e.g.**, nonmechanical dewatering related to surface impoundments) LBP-09-10 at 50 (emphasis added in bold).

PEF claims repeatedly that Contention 4 has somehow been changed since the Board's Order admitting it: the Board either "narrowed" it (Griffin Affidavit at ¶4) or the Commission "clarified" it (Motion at 3), Attachment A at 4, or "altered its scope" Motion footnote 25, p.13, [1]

In reality the Commission merely reaffirmed the Board's decision in denying PEF's Appeal by stating (emphasis in bold):

> "The Board's decision here was thorough and clear, and, **with the exception of one matter related to Contentions 7 and 8** – the Board's consideration of Greater-than-Class-C (GTCC) waste – **we decline to disturb the challenged contention admissibility rulings**." CLI-10-02 at 2.

So, contrary to PEF's repeated assertions, the Board decision on Contention 4 was in no way changed and is attached here as Attachment 2 It speaks for itself.

PEF's motion begins:

> On August 26, 2009, the Governor and Cabinet of the State of Florida, sitting as a siting board, issued its Final Order on Site Certification for Levy Nuclear Power Plant Units 1 and 2, Progress Energy Florida. The Florida Final SC Order approved and enclosed the Administrative Law Judge's recommendation and associated Conditions of Certification ("COC"). The Florida Department of Environmental Protection ("FDEP")

[1] A list of these misrepresentations is attached as Attachment 1

> issued final orders modifying the COC on January 12, 2010 and February 23, 2010. (Motion p. 1).

Yet again, the existence of a State Certification is put forth as proof that the LNP project will be benign (See DEIS 1-8,1-9,2-36,2-122,3-36, et al). This Board made it quite clear that the fact that an applicant secures a permit is not dispositive Tr. at p. 99. It is commonly known that the NRC has a higher bar than individual state agencies, and that bar is compliance with NEPA; for this reason any permits PEF has are only incidental to the purposes of the Board's determinations.

Then PEF begins a narration of the circumstances and outcome of their November 30, 2009 Motion to Compel. The gist of this argument seems to be that Interveners did not provide any proof for our contentions and that we have submitted no proof so far, and therefore C4 is indefensible. PEF also uses this argument to slip in their assertion that the Commission somehow "clarified" C4, but Interveners have already disposed of that inaccuracy above.

PEF states "Summary disposition "is a useful tool for resolving contentions in short order that… are shown by undisputed facts to have nothing to commend them." Private Fuel Storage, L.L.C. (Independent Fuel Storage Installation), LBP-01-39, 54 NRC 497, 509 (2001). Contention 4, however, fits into neither category: there are many disputed facts, and much to commend it.

In the Initial Scheduling Order, the Board wrote:

> …the Subpart L proceeding has two key advantages over motions for summary disposition. First, in a Subpart L evidentiary hearing the Board may ask the witnesses to appear in person and answer questions, the answers to which might significantly assist in resolving the matter. This is not possible when ruling on a motion for summary disposition. Second, in an evidentiary hearing the Board may <u>weigh</u> competing evidence and expert opinion and may resolve/decide factual disputes, whereas this is not possible when ruling on motions for summary disposition… LBP-09-22, p.13.

We believe the environment and public will be better served in an evidentiary hearing.

Furthermore, at the summary disposition stage, in fact, "the judge's function is not

himself to weigh the evidence and determine the truth of the matter but to determine whether there is a genuine issue for [hearing]." *Entergy Nuclear Generating Co.* (Pilgrim Nuclear Power Station), CLI-10-71 NRC __ (slip. op. at 12) (March 26, 2010). "The evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in his favor." *Id*. If "reasonable minds could differ as to the import of the evidence," summary disposition is inappropriate. *Id*. Non-movants are confident that the evidence we are submitting in this Answer, Dr. Bacchus's affidavit (Attachment 3) and other attachments, should be believed, and that our conclusions are logical. Interveners believe that our evidence should be weighed and heard by the Board and this Motion should therefore be denied. In their Motion, p.7, PEF once again claims C4 has been "narrowed" and "clarified," then claims:

> because the undisputed scope and magnitude of impacts from salt drift and passive dewatering cannot noticeably destabilize aspects of the affected aquatic resources, Progress is entitled to summary disposition on those aspects of Contention 4."

What they attempt to show, however, is that salt drift <u>or</u> passive dewatering will not destabilize the resources included in Contention 4. There is no discussion of the synergistic effects that can be expected. Each stressor is considered as if it were occurring in a vacuum so inasmuch as ours was a Contention largely based on cumulative impacts, this approach does not make sense. As shown by the accompanying Affidavit of Dr. Sydney Bacchus (Attachment 3) there is a genuine issue with respect to the material facts regarding the scope and magnitude of impacts from salt drift and passive dewatering. As discussed below, because the scope and magnitude of impacts from salt drift and passive dewatering are sizeable and will noticeably destabilize aspects of the affected aquatic resources, the Motion For Summary Disposition should not be granted.

III. THE BOARD SHOULD DENY SUMMARY DISPOSITION OF ANY ASPECTS OF CONTENTION 4

Interveners' rebuttal of this Summary Disposition is supported by the Affidavit of Dr. Sydney Bacchus, a noted hydroecologist with many published peer-reviewed papers dealing with the interactions of hydrology and habitats. Her expertise is in karst environments and she is very familiar with Central Florida and the Levy County area.

A. Salt Drift and Salt Deposition from The Levy Cooling Towers Will Adversely Destabilize Aquatic Resources.

Salt drift and salt deposition from the Levy cooling towers will adversely impact vegetation off-site and on-site as well as impact water resources. Bacchus ¶D-16a. Salt drift and salt deposition from the Levy cooling towers cross the threshold for serious impacts to vegetation off-site and pose a credible threat to vegetation on-site. Bacchus ¶E-14, E-16.

The Attachments show that adverse impacts to aquatic resources off-site are to be expected because the salt deposition that will occur is more than the threshold for impacting sensitive native forms of vegetation Bacchus ¶ E-16.

With regard to salt deposition on-site, vegetation in the freshwater wetlands on-site will be adversely impacted by salt deposition at the levels projected to occur at Levy under the assumptions used to estimate the maximum potential amount of salt deposition Bacchus ¶ E-15.

1. Summary of Facts in Dispute Regarding Salt Drift from The Levy Mechanical Cooling Towers

Salt drift is regulated as an air emission by the State of Florida and although the State has specified the maximum salt drift from Levy based on the best available control technology, this does not release the DEIS from determining the effects and cumulative effects of the salt drift, nor does compliance with State standards guarantee that no LARGE effects will be noted Bacchus ¶ E-11.

The estimates of salt drift deposition are based on meteorological conditions derived at a distant site (Tampa) not related to LNP.Bacchus ¶ D-13 Dr. Howroyd based his salt deposition estimation on "the single worst-case month of meteorological conditions that occurred during the 5-year period of meteorological data that was used as input to the model." But the rainfall at Levy should also be disregarded as a mitigating factor due to its unreliability and possible changes to rain distribution quantities caused by climate change during the projected 60 year duration for this project Bacchus ¶ E-13, E-21.

The DEIS admits that the weather patterns are changing (DEIS 7-9), so the assumptions made by Dr. Howroyd cannot stand. There have been entire months with no rainfall, but this does not mean that the dry period did not extend from the month before into the month after his "worst case". Bacchus ¶ E-23

2. Off-Site Salt Deposition Rate

The maximum predicted off-site deposition rate is 6.81 kilograms/hectare/month (kg/ha/mo) due west of the cooling towers is erroneous, since the model used winds that differ significantly from those recorded at the LNP site Bacchus ¶ E-13, E-14. The dispersion modeling analysis also incorrectly concludes that the off-site deposition effects would decrease significantly with increasing distance because salt drifting inland

towards freshwater areas will be impact freshwater plants and associated animals more severely than more salt tolerant areas close to the coast (Westward) Bacchus ¶ E-19 By using incorrect weather data, and relying on precipitation that is by no means guaranteed, the DEIS draws the incorrect conclusion that a deposition rate below 10 kg/ha/mo off-site will result in SMALL impacts, when in reality those impacts will be LARGE Bacchus ¶ E-16

3. On-Site Salt Drift/Deposition Rate

The estimate of on-site salt deposition is sufficient to noticeably alter and impact vegetation, water, and soil salinity in on-site freshwater wetlands Bacchus ¶ D-21. Furthermore, the monitoring around the Progress Energy Crystal River Energy Complex (CREC) site provides no support for a lack of impacts at Levy Bacchus ¶ E-19, E-20. The CREC vegetation was not similar, the monitoring sites constantly changed, and the mechanical draft cooling towers were only operational *for the final year of the study* Bacchus ¶ E-19 .Even with the flaws of the monitoring, significant salt deposition damage was noted at CREC Bacchus ¶ E-19.

4. Summary Disposition of Salt Drift and Deposition Aspects of Contention 4 Is Not Warranted

Interveners have demonstrated that it is reasonably foreseeable for salt drift or salt deposition to cause noticeable alterations to the freshwater wetlands on-site as a result of the Levy operation. Salt drift will result in salt deposition off-site that will cause injury or stress to on-site freshwater wetlands because even the assumed estimate of salt deposition on-site is, enough to cause LARGE impacts to salt intolerant wetlands Bacchus ¶ E-15.

This Board should not grant summary disposition with regard to salt drift and salt deposition.

B. Passive Dewatering

With regard to passive dewatering, Contention 4 as admitted raises the issue of whether the environmental analysis inadequately addresses and underestimates "onsite and offsite dewatering impacts associated with the connection of the site with the underlying Floridan aquifer system, impacts on OFWs [Outstanding Florida Waters], impacts to water quality resulting from increased concentrations of nutrients resulting both directly from dewatering and indirectly via additional wildfires that will be caused by dewatering." LBP-09-10 at 106. As discussed below, there will be passive dewatering at Levy, resulting in impacts at Levy that must be addressed individually and cumulatively. Summary disposition with regard to passive dewatering is not appropriate. Intervenor's rebuttal of this part of the Summary Disposition Motion is again supported by the Affidavit of Dr. Sydney Bacchus.

The Attachments to this Answer show that passive dewatering is included in the Levy Project through the nuclear island construction, stormwater retention ponds, and swales and ditches Bacchus ¶ D-4.

The nuclear islands at the Levy site will be built above ground level, but their construction entails deep excavations that will both dewater in their own right and affect the natural flow of groundwater: another form of passive dewatering Bacchus ¶ D-2. The drainage facilities are designed to detain stormwater, but will intersect with the surficial aquifer, resulting in dewatering during dry periods Bacchus ¶ D-6 . Stacking water in the ponds restrains historic overland flow and thus passively dewaters Bacchus ¶ D-6, D-7. The average predicted annual lake evaporation near the Levy site of 46 to

50 inches per year is disputed by US Geological Service data Bacchus ¶D-8 while the expected annual precipitation of 53 inches per year is irrelevant if dealing with dewatering during dry or drought periods and possible changes to climate Bacchus ¶ D-8. The three stormwater ponds and associated collection swales are expected to result in a net dewatering of the aquifer Bacchus¶ D-4. By interfacing with the surficial aquifer, during dry periods, when dewatering will result in the most harm to local wetlands, the wet ponds will be drawing water upwards, denying the normal flow below ground Bacchus ¶D-2, D-6. Likewise, the swales will dewater immediately after heavy rain, resulting in a loss of percolation Bacchus ¶ D-4.

There is a direct connection from on-site to off-site surface waters, via historic overland flow. Bacchus ¶ D-9 The site is connected "by overland flow directly to the Lower Withlacoochee River" (Levy FSAR p.2.4-3) Both the Witlacoochee and Waccasassa Rivers are expected to suffer due to impacts of both active and passive dewatering at Levy, as well as impacts to water quality and plant life surrounding these rivers due to salt drift. Bacchus ¶ D-9

Considering the alterations due to salt drift/deposition and passive dewatering, the area designated the zone of environmental impacts is insufficient Bacchus ¶ C-1, C-3. Similarly, the consequential impact on species, federally endangered or otherwise, is also insufficiently addressed by PEF and the DEIS Bacchus ¶ D-4, D-13, D-15.

Since Contention 4 (C4) as pled was based on the ER's inadequate consideration of not only direct and indirect effects of LNP, but also largely upon cumulative impacts, Interveners contend that the Summary Disposition Motion filed by PEF is not germane. Nowhere in their Motion or accompanying Affidavits is any discussion of the synergistic effects salt drift *and* passive dewatering *together* will have on the ecosystem at Levy. It is neither appropriate nor logical to segment the two

stressors nor to separate parts A and B of C4, and doing so is inimical to the purpose of ascertaining the true impacts of building the LNP Bacchus ¶ C-4, D-2.

Assuming *arguendo* that salt drift alone has minor effects and passive dewatering alone has minor effects, and Interveners concede neither, their separate impacts are really irrelevant if their individual impacts are compounded by interaction not only with each other, but also with any other stressors past, present and future. The Motion before this Board completely omits any consideration of the synergistic effects or cumulative impacts of salt drift **and** passive dewatering. As explained in Chapter 1, page 1 of the NEPA booklet (Attachment 4) put out by the Council on Environmental Quality: "Considering Cumulative Effects Under the National Environmental Policy Act (at (http://ceq.hss.doe.gov/nepa/ccenepa/ccenepa.htm) under" Introduction to Cumulative Effects Analysis") "Evidence is increasing that the most devastating environmental effects may result not from the direct effects of a particular action, but from the combination of individually minor effects of multiple actions over time."

This Answer is supported by a Statement of Material Facts as to which Interveners assert that there are multiple genuine disputes (Attachment 5) and the Affidavit of Dr. Sydney Bacchus, a hydroecologist with extensive experience in the interactions of various environmental stressors in wetland and other natural habitats in the state of Florida, most importantly including the vicinity of the LNP. Dr. Bacchus holds a multi-disciplinary doctoral degree in Hydrology, Ecology, and Plant Physiology and is ideally suited to assess the problems with the LNP.

Finally, it must be noted again that PEF expresses little interest in the cumulative effects of dewatering in its various forms, when **combined** with salt drift. To quote the Motion:

> As the Board stated, if the environmental analysis does not underestimate the environmental impacts and they are no more than SMALL, then no further review of the consequential impacts is needed. As discussed above, impacts

> from salt drift/deposition and passive dewatering cannot be more than SMALL. The consequential impacts logically cannot be underestimated if their predicates are not underestimated Motion p. 14

This defies logic and is unacceptable coming from a law firm that must be aware of the NEPA provisions for cumulative impacts flowing from separate factors that work synergistically to multiply what might, standing alone, be small impacts, into a LARGE cumulative impact, for, as 40 CFR § 1508.7 defines cumulative impacts (emphasis in bold):

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. **Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.**

And 40 CFR § 1508.27(b)7 cautions against segmentation of impacts:

In evaluating intensity the following should be considered: Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

In this case, the impact of these two actions (creating salt drift and passively dewatering) cannot reasonably be separated from each other.

The position taken by PEF and NRC Staff relating to the “clarification” or restriction of Contention 4 have proven to be incorrect. Intervenors have provided ample evidence that salt drift by itself will have significant impacts on the area surrounding the LNP site. Despite declarations to the contrary, there WILL be passive dewatering at LNP, and it, too, will have LARGE impacts on the area surrounding the Levy project. Finally, and perhaps most importantly, we have shown that the DEIS has failed adequately to reflect the cumulative impacts of the salt drift and dewatering, both passive and active. The heart of Contention 4 is that damages from individual causes will be compounded

because of the interaction between the myriad adverse effects of constructing and operating the proposed LNP Bacchus ¶ E-15 Those compounded – cumulative – impacts will result in environmental damage in more complex ways and in greater magnitude than myopic evaluations of individual components can reveal. Bacchus ¶ E-15. There was no consideration in Howroyd's affidavit or by PEF, or in the DEIS of how plants and animals subjected to a reduced availability of uncontaminated fresh water resulting from passive and active dewatering, particularly during drought conditions, or other periods of limited rainfall, will be affected by the additional stressor of salt drift. In fact, both PEF and the DEIS consistently look at each impact as discrete problems. Clearly a more holistic approach is required for compliance with NEPA regarding cumulative impacts.

Intervenors have, at the very least, shown that the dispute of the material facts deserves to be heard, and our Answer shows that any disposition prior to the issuance of the FEIS will be premature and unwarranted. 10 CFR 2,710(d)(1) deals with denying Summary Disposition unless it expedites the proceedings. While Interveners also seek a timely process, it would be counterproductive if the Board were to dismiss this portion of Contention 4, but have Staff reverse themselves after weighing public comment, including new information, and change the FEIS, resulting in renewed proceedings. We ask that the Board deny PEF's Motion for Summary Disposition of parts of Contention 4.

Respectfully Submitted,

_____/s/_____
Mary Olson
Nuclear Information and Resource
Service Southeast Office,
Cara Campbell, Gary Hecker,
The Ecology Party of Florida
on behalf of the Co-Interveners

November 15, 2010

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
Alex S. Karlin, Chairman
Dr. Anthony J. Baratta
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In the Matter of PROGRESS ENERGY FLORIDA, INC. (Combined License Application for Levy County Nuclear Power Plant, Units 1 and 2)	Docket No. 52-029-COL, 52-030-COL ASLBP No. 09-879-04-COL-BD01 November 15, 2010

Certificate of Service

I hereby certify that copies of the Answer to Motion for Summary Disposition…C-4 have been served on the following persons by Electronic Information Exchange on this 15th Day of November, 2010:

Administrative Judge Alex S. Karlin, Chair Atomic Safety and Licensing Board Panel Mail Stop: T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555-0001 E-mail: Alex.Karlin@nrc.gov	Office of Commission Appellate Adjudication Mail Stop O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555-0001 E-mail: OCAAmail@nrc.gov
Administrative Judge Anthony J. Baratta Atomic Safety and Licensing Board Panel Mail Stop: T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555-0001 E-mail: Anthony.Baratta@nrc.gov	Office of the Secretary ATTN: Docketing and Service Mail Stop: O-16C1 U.S. Nuclear Regulatory Commission Washington, DC 20555-0001 E-mail: HEARINGDOCKET@nrc.gov
Administrative Judge William M. Murphy Atomic Safety and Licensing Board Panel Mail Stop: T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555-0001	Megan Wright Law Clerk Mail Stop: T-3F23 U.S. Nuclear Regulatory Commission Washington, DC 20555-0001 E-mail: megan.wright@nrc.gov

E-mail: William.Murphy@nrc.gov	
Mary Olson NIRS Southeast PO Box 7586 Asheville, NC 28802 E-mail: maryo@nirs.org	Michael Mariotte Nuclear Information and Resource Service 6930 Carroll Ave Suite 340 Takoma Park, MD 20912 E-mail: nirsnet@nirs.org
Michael Canney The Green Party of Florida Alachua County Office PO Box 12416 Gainesville, FL 32604 E-mail: alachuagreen@windstream.net	Cara Campbell The Ecology Party of Florida 641 SW 6th Ave Ft. Lauderdale, FL 33315 E-Mail: levynuke@ecologyparty.org
John H. O'Neill, Esq. Michael G. Lepre, Esq. Blake J. Nelson, Esq. Robert B. Haemer, Esq. Jason P. Parker, Esq. Counsel for Progress Energy Florida, Inc. Pillsbury, Winthrop, Shaw, Pittman, LLP 2300 N. Street, NW Washington, DC 20037-1122 E-mail: john.O'Neill@pillsburylaw.com michael.lepre@pillsburylaw.com blake.nelson@pillsburylaw.com robert.haemer@pillsburylaw.com jason.parker@pillsburylaw.com	U.S. Nuclear Regulatory Commission Office of the General Counsel Kathryn L. Winsberg, Esq. Sara Brock Kirkland, Esq. Jody Martin, Esq. Kevin Roach Laura Goldin Joseph Gilman, Paralegal Washington, DC 20555-0001 E-mail: Kathryn.winsberg@nrc.gov; seb2@nrc.gov; jcm5@nrc.gov; jsg1@nrc.gov ; Kevin.Roach@nrc.gov Laura.goldin@nrc.gov

/Signed (electronically) by/

Mary Olson
NIRS Southeast Office
maryo@nirs.org