

May 31, 2022

Robert Duchesne
Acting Chair for Nordic Aquafarms Permitting
Board of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

Re: Nordic Aquafarms A1146-71-A-N Permit Modification Appeal

Dear Mr. Duchesne:

We received a notification that the License Holder was requesting a modification to the Air License via the List Serve. We provided comments and requested a hearing. DEP denied the request and issued a letter extension two-days before the Air License expired. I repeated my request for a response to the concerns raised and requested that DEP correct their decision to comply with the law.

I also requested that the AG office provide clarification to the process, but they declined to answer our questions, with the rationale that the email as a whole amounted to a request for legal advice. We can appreciate that the AG's office must be careful to work within their limits, but legal advice was actually the opposite of the intent of the letter. As noted, the intent was to understand the State's current planned framework for the process, so we could explore our options. The letter referred us back to the DEP, hence this appeal, and a repeat of one of the questions.

There was one question specifically related to the public hearings promised as justification for moving the permitting process from Applications to License (with the information and studies still outstanding as noted at the deliberations). Since the AG's office would not answer my question, I will ask it of the BEP. While we understand that the procedures may be somewhat different after the findings and Orders were issued, it should not relieve the Facility from its obligation to include the public, especially Intervenors, in the construction permitting process that is still unfinished. **Please provide a list and schedule for the topics to be included in the hearings as discussed at your deliberations just prior to approving the Orders. Thank you.**

Nordic Aquafarms A1146-71-A-N Permit Modification Appeal

For your convenience, this appeal is arranged via the "Required Appeal Contents"

1. **Aggrieved Status** – The DEP has extended Nordic's ability to directly impact the power supply, air quality, and/or water, as a result of this modification to a condition. The Northport Village Corporation will be required to take either an unnecessary environmental risk, more frequent and prolonged power outages, and/or exposure to the local air quality impacts from a major fish kill.

Although DEP and BEP asked Nordic directly what their minimum, average, and maximum power demand would be during permitting, Nordic elected to not provide this information. As a result, the BEP was forced to make two default power assumptions that have since been proved to be inaccurate.

By modifying this permit condition, rather than requiring Nordic to first correct their fatal flaws, the NVC is now assured that at some point in time Nordic will have to decide to either adversely impact the NVC and surrounding area or lose their fish factory inventory and suffer irreversible financial losses. Even worse, they may try to ride the line between the two where the NVC will suffer the worst of all scenarios which would be prolonged power outages, elevated nutrient discharges that lead to “dead zones” in our mooring field and designated swimming areas, and a major fish kill that will create air emission problems with containment, and disposal from tons of decaying fish waste.

2. ***The findings, conclusions, or conditions objected to or believed to be in error.*** The DEP could not extend the construction condition because that also extends the ability of Nordic to operate under their incurable permitting assumptions. If it were extended, it would insure that many of the Findings in the MEPDES permit and the SLODA permit were in error, so as a result BEP now must invalidate or refuse to modify those permits.
3. ***The basis of the objections or challenge.*** Nordic did not properly justify why this extension is necessary. There are two separate fatal flaw concerns that have not been presented by Nordic to DEP as they are required to do so in the conditions of each permit. As result of Nordic withholding this information from DEP, they could not include it in their justification for the extension. Missing from this justification therefore, is any discussion about how the arbitrary 18-month extension request from Nordic will solve their two permitting fatal flaws: the timeline for one is completely unknown based upon the permits and design in hand, and the second one cannot be cured with time.

As discussed in detail in the attached objection to DEP prior to the permit extension letter, the PUC has determined that each and every proposed project to be added to the grid in the NVC area has been approved except Nordic. In fact, the current status is that the PUC is no longer looking for a way to connect Nordic, but instead the grid must first be upgraded.

Nordic suggested during permitting that they could shut off their water intake and discharge for short periods of time during process upset conditions. They did not say that they could do so with no grid power available at all, therefore this permit to supply limited secondary power cannot be extended until there is an actual source of primary power.

To be clear, the NVC’s objection is not that the grid should not be upgraded to allow any new user to connect, but there are limited public funds for upgrades and any new users must be provided power in an order that makes sense, along with the upgrades proposed to benefit all ratepayers. Again, without suggesting that the BEP pass any judgement about the timeline for Nordic to obtain power, the important factor for this appeal is that Nordic did not justify why the requested 18-month extension would cure this fatal flaw in their site selection process.

The second fatal flaw is their inadequate secondary power supply capacity. The attached letter describes the power demand versus supply discrepancy in more detail, but for summary

purposes: Nordic's "normal" power demand is 32 Megawatts (MW) while Nordic's "normal" power supply is 10 MW with a "peak" supply of 14 MW. Therefore, Nordic can only provide one-third of its normal demand on average, and less than one-half in a peak scenario, respectively. Nordic offered testimony that suggested that they could "cut back" some, but they never provided any testimony that they could keep their facility running at one-third the available power. As the attached document details, using Nordic's own assumptions, a time will come where Nordic will be required to chose between diverting all its efforts to keep its fish alive, or adversely impacting the NVC's air and water, or both.

In Maine's approved SIP program, Chapter 115 serves different purposes. Based upon the uncontrolled potential to emit, this fish factory facility is a major source of air pollution. Maine DEP accepted operating restrictions that would classify the facility as a minor source of air pollution. Under the uncontrolled major source classification, Chapter 115 would serve as the New Source Review (NSR) permit for construction, and the Operating Permit would be issued under Chapter 140. For minor sources, Chapter 115 serves as both the NSR construction permit and the Operating Permit. This coupling of permit goals for a minor source is a significant distinction. To modify this License, any licensee must demonstrate that the modification will meet both. It does not.

The lack of primary power and secondary power is a serious permitting deficiency. While considering this appeal, please ask yourselves:

Could the BEP have approved the three Applications together for this facility knowing that there is no primary source of power, and the secondary power plant proposed can only provide a fraction of the primary or emergency power needs?

Since the only reasonable answer is no, it prevents any modification or extension of this License without first addressing these fatal flaws. And since Nordic did not attempt to justify how their 18-month extension would cure these fatal flaws, the License was destined to expire.

4. **The remedy sought.** As noted in the attached letter, prior to the permit expiring there were many options available to Nordic to cure these fatal flaws. At this junction, there are still two viable and reasonable alternatives. The simplest one is to overturn this License modification and confirm that this license has expired, then Nordic can provide a new Application for a power plant that is similar to the one they are proposing in California that can meet 100% of their normal power demand. Since they already have a more reasonable alternative, it could be designed and permitted as the primary and secondary source of power initially. It could then be modified later to be only a secondary source of power. The NVC prefers this course of action because Nordic came to our Community Hall early on and explained how they would be providing 4 MWs of power back to the grid at times to help alleviate power outages and to reduce the startup load in (N-1) situations. They also explained how they were going to put renewable energy on their acres of rooftops to reduce the burden on the grid. These things can be added back in, as promised, with this remedy.

The second is to modify this extension from 18-months with an added condition that within 30-days Nordic provide their minimum, normal, and maximum power demands and supply needs to DEP along with a detailed explanation of how this time extension alone will cure their primary

and secondary power source fatal flaws. Please note that 30-days is very reasonable, as it is the same amount of time required of Nordic to provide this exact request for emergency power needs via the MEPDES permit Condition E.1(b), which they failed to do so properly 18 months ago, as discussed in detail in the attached letter provided to the DEP.

5. **All matters to be contested.** The Air License issued is for the Nordic Aquafarms facility. If this license is not allowed to expire then the NVC must contest the assumptions made regarding adverse water or air quality in the MEPDES and SLODA permits. If it is, then only issues with respect to primary and secondary power can be addressed in the next permit application process.

This License was issued as a source of secondary and peak shaving power with restrictions that must be practically and federally enforceable in order for this facility to maintain its minor source status. If this License is not allowed to expire, or if there is an added condition that requires Nordic to justify that their 18-month extension in the 30-day period and they fail to do so to BEP's satisfaction, then the minor source status of this License is being contested, as well as the validity of the MEPDES permit with respect to adequate secondary power.

6. **Request for a hearing.** Does the NVC think this rises to the minimum threshold for public involvement and a hearing? Yes. But a hearing is not as important as the BEP taking action on the NVC's concern. We would much prefer that BEP handle this matter through one of our proposed remedies than have a hearing on the subject to discuss it. If the BEP does not plan to entertain and recommend one of our remedies, then the NVC requests a hearing, I would testify, and the information provided herein is the basis for the hearing.
7. **New or additional evidence to be offered.** This letter and the attached letter already submitted, along with some emails from the list serve are to be entered. We would also request that BEP demand that Nordic provide the information we reference in our letter directly to the BEP. After all, it is their information, and it is only fair that they provide it to you with their context. However, if they refuse or decline to do so, I have downloaded copies of it from the links to the public records in the letter and can forward them if desired.

We look forward to your decision.

Sincerely,



Michael T. Lannan, P.E.

NVC Intervenor Liaison for Nordic Aquafarms

From: [Mike Lannan](#)
To: [Muzzey, Lynn](#)
Cc: [Barry A. Costa-Pierce](#); [Bensinger, Peggy](#); [Boak, Scott](#); [Brewer, Angela D](#); [Burke, Ruth A](#); [Callahan, Beth](#); [Carrie Byron](#); [Charles Tilburg](#); [Crawford, Jeff S](#); [DPerkins](#); [DEP, Nordic Aqua Farms](#); [Diane Hunt Braybrook](#); [Dionne, Cindy L](#); [Donald Perkins Jr.](#); [Donna Broderick](#); [Ed Cotter](#); [Eleanor Daniels](#); [Elizabeth M. Ransom](#); [Erik Heim](#); [Gilbert, Jane](#); [Hallowell, Dawn](#); [Hinkel, Bill](#); [Jacki Cassida](#); [Jensen, Laura](#); [Joanna Tourangeau](#); [Kavanah, Brian W](#); [k.ervintucker](#); [Lawrence Reichard](#); [Livesay, Nick](#); [Marianne Naess](#); [Martin, Kevin](#); [Northport Village Corporation](#); [Ostrowski, Kevin](#); [Peter Tischbein](#); [Wood, Gregg](#)
Subject: RE: A-1146 Nordic Extension
Date: Wednesday, June 1, 2022 11:26:57 AM
Attachments: [NVC Appeal of the Chapter 115 Construction and Operating Permit Extension.pdf](#)
[Nordic Aquafarms A1146-71-A-N Permit Amendment Request - NVC response.pdf](#)

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Ms. Muzzey-

Attached you will find our formal appeal to any modification to the Air License. The DEP may call it whatever they like, but according to the Clean Air Act and Maine's SIP program, the DEP modified a condition regardless of whether it is unusual or common, and regardless of whether the conditions stated that they had the opportunity to request and justify a modification to a condition. The letter provided by DEP was in fact a modification to an existing condition to extend the start time for construction and operations.

For a typical License Holder that had worked out all of their fatal flaws prior to the Order and License being issued, it may feel like DEP is just extending the construction window by approving this request, as there is no potential harm for operations possible in doing so, but since a Chapter 115 License for a minor source is used for both the construction and operating permit, the DEP cannot knowingly extend any operating fatal flaws that can adversely impact the NVC and surrounding area.

Inadequate primary and secondary electrical power must be considered the granddaddy of fatal flaws, especially for a facility that declared that "everything is going to be electric", as none of the permit assumptions can be met facility-wide without it. While we can appreciate that this extension request is often granted when nothing new has been provided that would suggest that the permit cannot be extended, the NVC provided sufficient comments to highlight the deficiencies and concerns, but the letter was brushed aside and simply footnoted as an afterthought.

While we can understand that a simple notification to the List Serve may be all that is initially required for a project that may be requesting something that is often typical or common via Chapter 3, but certainly that does not relieve the DEP of its duty to have the License Holder address a fatal flaw first, before any modifications are considered, that has been highlighted in sufficient detail that is not at all typical or common. Nordic's entire air permitting process for a secondary source of power has been anything but typical or common.

1. It is common for a facility to determine that they have adequate primary and secondary power during their due diligence efforts before a permit is issued. This was not the job of DEP, but the Applicant. Nordic was very elusive about providing any power related details during permitting, but eventually, as any project progresses, it is just a matter of time before the information withheld would become public. And since it has, (i.e. the new information

provided by Nordic and the PUC), it is clear that they do not have close to adequate power now. And since they did not notify the DEP of these findings and change in permitting assumptions, or offer a solution that could work within the current Licenses as Ordered, as all permit holders are required to do, this License was destined to expire on May 20, 2022.

2. It is common for an Applicant to provide its minimum, maximum and emergency power demand when requested by regulatory agencies, so that something like this modification to the License later could actually be the typical and common request that is often is. Nordic refused to answer the question directly to the DEP and the Belfast Planning Board about their power demand, and as a result they knowingly “kicked this compliance can down the road” to now. And since they have not addressed this fatal flaw prior to May 19, 2022, the License was destined to expire on May 20, 2022.
3. It is typical and common for an Applicant to provide the two unknowns to a very simple equation while proposing and justifying minor source permitting restrictions: Emergency Power Supply > Emergency Power Demand. And since Nordic did not, they knowingly “kicked this compliance can down the road” to now. And since they have not addressed this fatal flaw prior to May 19, 2022, the License was destined to expire on May 20, 2022.
4. It is common for a MEPDES License Holder to provide the two unknowns to the same very simple equation: Emergency Power Supply > Emergency Power Demand in response to satisfy Condition E.1(d) within 30 days of the permit being issued nearly 18 months ago. And since Nordic did not then and also did not find a way to address it over the last 17 months, they knowingly “kicked this compliance can down the road” to now. And since they have not addressed this fatal flaw prior to May 19, 2022, the License was destined to expire on May 20, 2022.
5. It is common for a License Holder to only provide minor source permitting restrictions that allow for adequate operations of the facility with those restrictions in place. Whether they did so or not at the time of permitting, is not the focus of this appeal. It is clear now however, with the new public information provided, that they cannot meet the restrictions they proposed and operate in any practical manner, and therefore this minor source Air License was destined to expire on May 20, 2022.

Attached is our letter appeal and the letter provided previously to the DEP with references to public information readily available via the links provided. As discussed in both letters, Nordic has a copy of all of these references, and although they should have provided them to DEP before now to alert the DEP of the fatal flaws along with Nordic’s proposed remedies, they can readily provide these materials to the BEP in response to a request for information at any time.

We are also providing a hard copy of both of these via regular mail to the Acting Chair for Nordic Aquafarms Permitting, Robert Duchesne.

Thank you for your prompt attention to this matter.

Sincerely,

Michael Lannan, P.E.
Northport Village Corporation
Liaison to the DEP for Nordic Aquafarms Permitting

From: Muzzey, Lynn <Lynn.Muzzey@maine.gov>
Sent: Wednesday, May 25, 2022 3:06 PM
To: Mike Lannan <mlannan@techenv.com>
Cc: Barry A. Costa-Pierce <bcostapierce@une.edu>; Bensinger, Peggy <Peggy.Bensinger@maine.gov>; Boak, Scott <Scott.Boak@maine.gov>; Brewer, Angela D <angela.d.brewer@maine.gov>; Burke, Ruth A <Ruth.A.Burke@maine.gov>; Callahan, Beth <Beth.Callahan@maine.gov>; Carrie Byron <cbyron@une.edu>; Charles Tilburg <ctilburg@une.edu>; Crawford, Jeff S <Jeff.S.Crawford@maine.gov>; DPerkins <DPerkins@curtisthaxter.com>; DEP, Nordic Aqua Farms <NordicAquaFarms.DEP@maine.gov>; Diane Hunt Braybrook <dbraybrook@yahoo.com>; Dionne, Cindy L <Cindy.L.Dionne@maine.gov>; Donald Perkins Jr. <don@gmri.org>; Donna Broderick <dl_broderick@hotmail.com>; Ed Cotter <ec@nordicaquafarms.com>; Eleanor Daniels <ellie@greenstore.com>; Elizabeth M. Ransom <elizabeth.ransom@ransomenv.com>; Erik Heim <erik.heim@nordicaquafarms.com>; Gilbert, Jane <Jane.Gilbert@maine.gov>; Hallowell, Dawn <Dawn.Hallowell@maine.gov>; Hinkel, Bill <Bill.Hinkel@maine.gov>; Jacki Cassida <jc@nordicaquafarms.com>; Jensen, Laura <Laura.Jensen@maine.gov>; Joanna Tourangeau <jtourangeau@dwmlaw.com>; Kavanah, Brian W <Brian.W.Kavanah@maine.gov>; k.ervintucker <k.ervintucker@gmail.com>; Lawrence Reichard <lreichard@gmail.com>; Livesay, Nick <Nick.Livesay@maine.gov>; Marianne Naess <mn@nordicaquafarms.com>; Martin, Kevin <Kevin.Martin@maine.gov>; Mike Lannan <mlannan@techenv.com>; Northport Village Corporation <nvcmaine@gmail.com>; Ostrowski, Kevin <Kevin.Ostrowski@maine.gov>; Peter Tischbein <peter.tischbein@usace.army.mil>; Wood, Gregg <Gregg.Wood@maine.gov>
Subject: RE: A-1146 Nordic Extension

Mr. Lannan,

As outlined in the Department's letter dated May 18, 2022, the Department does not consider a request to extend the period to commence construction pursuant to Standard Condition (3) of an air emission license to be a reopening or modification of the air emission license because the license holder is electing to make use of an option already provided for in the license. Such requests are not unusual or uncommon. The licensee provided notice of their request pursuant to 06-096 C.M.R. ch. 3, § 30(A) via the Service List. Rights to appeal, if any, would be governed by 06-096 C.M.R. ch. 2. Information regarding a person's rights and obligations in filing an appeal, including a link to 06-096 C.M.R. ch. 2, is available on [the Department's website](#).

Lynn Muzzey, P.E.
Bureau of Air Quality
Dept of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

From: Mike Lannan <mlannan@techenvironment.com>

Sent: Monday, May 23, 2022 4:30 PM

To: Muzzey, Lynn <Lynn.Muzzey@maine.gov>; erik.heim@nordicaquafarms.com; Bensinger, Peggy <Peggy.Bensinger@maine.gov>

Cc: Barry A. Costa-Pierce <bcostapierce@une.edu>; Boak, Scott <Scott.Boak@maine.gov>; Brewer, Angela D <angela.d.brewer@maine.gov>; Burke, Ruth A <Ruth.A.Burke@maine.gov>; Callahan, Beth <Beth.Callahan@maine.gov>; Carrie Byron <cbyron@une.edu>; Charles Tilburg <ctilburg@une.edu>; Crawford, Jeff S <Jeff.S.Crawford@maine.gov>; DPerkins <DPerkins@curtisthaxter.com>; DEP, Nordic Aqua Farms <NordicAquaFarms.DEP@maine.gov>; Diane Hunt Braybrook <dbraybrook@yahoo.com>; Dionne, Cindy L <Cindy.L.Dionne@maine.gov>; Donald Perkins Jr. <don@gmri.org>; Donna Broderick <dl_broderick@hotmail.com>; Ed Cotter <ec@nordicaquafarms.com>; Eleanor Daniels <ellie@greenstore.com>; Elizabeth M. Ransom <elizabeth.ransom@ransomenv.com>; Gilbert, Jane <Jane.Gilbert@maine.gov>; Hallowell, Dawn <Dawn.Hallowell@maine.gov>; Hinkel, Bill <Bill.Hinkel@maine.gov>; Jacki Cassida <jc@nordicaquafarms.com>; Jensen, Laura <Laura.Jensen@maine.gov>; Joanna Tourangeau <jtourangeau@dwmlaw.com>; Kavanah, Brian W <Brian.W.Kavanah@maine.gov>; k.ervintucker <k.ervintucker@gmail.com>; Lawrence Reichard <lreichard@gmail.com>; Livesay, Nick <Nick.Livesay@maine.gov>; Marianne Naess <mn@nordicaquafarms.com>; Martin, Kevin <Kevin.Martin@maine.gov>; Northport Village Corporation <nvcmaine@gmail.com>; Ostrowski, Kevin <Kevin.Ostrowski@maine.gov>; Peter Tischbein <peter.tischbein@usace.army.mil>; Wood, Gregg <Gregg.Wood@maine.gov>; Kennedy, Eric <Eric.Kennedy@maine.gov>

Subject: RE: A-1146 Nordic Extension

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Ms. Bensinger-

As you know, we provided some concerns with the possible extension of the Air License. They were disregarded minus the inclusion of a passing footnote in a DEP letter provided 48 hours prior to the License expiring. The footnote inferred that the details and concerns provided by the NVC were disproportionate to the request.

We would agree that the concerns expressed far outweigh the benefits to the State of Maine or the mid-coast area by extending this Air License, as "justified" by Nordic is their single page request. The simple fact that License holders are often granted this request because of construction scheduling or equipment availability issues, does not justify ignoring the fact that the most important permitting assumption for this Air License has since been exposed as false. It seems impossible to consider this request, in any way without curing the License fatal flaw discussed in the NVC letter first, or at least co-currently. There was an assumption during permitting that the facility with the voluntary and practical restrictions proposed during permitting for this Air License would then have adequate primary and secondary power to function, but this assumption is now clearly incorrect.

Sufficient power is critical to all aspects of this facility meeting its permitting requirements. Since this facility cannot operate without the power required, there were really only two viable alternatives for

BEP to consider when the License made this request that would not have directly extended the License deficiencies:

1. Modify the License based upon the information as provided to cure the deficiencies; or
2. Allow the License to expire and have the Licensee re-permit with cures to the deficiencies

The License holder was required to notify the NVC as Intervenors of their desire to modify a condition in the permit, and to provide information on timely compliance with the conditions. During the permitting process, the BEP was required to respond to questions and concerns from the Intervenors. Intervenors and the Applicant were required to communicate via the List Serve. This request to modify a condition was posted to the list serve, but that process was not followed. As a result, I have a number of questions, I'd please like you to address as soon as possible:

1. How has the Intervenor notification, communication, and involvement formally changed now that the Licenses have been issued?
2. If DEP can take action without considering or addressing Intervenors questions and concerns, what is the purpose of the List Serve now?
3. What is the formal process to appeal this decision by the DEP?
4. What is the window of time for any such appeal?
5. Since this change to the condition was addressed by DEP and not BEP, do we appeal it to the BEP?
6. At the BEP deliberations prior to issuing the Orders, there were a number of conditions discussed by BEP that would require public input and hearings. When and where will BEP schedule these hearings?
7. What specific topics or conditions will be discussed in those BEP hearings?
8. It seems like a fatal flaw of inadequate power can be discussed at those hearings as applicable to the primary topic, correct?
9. How does this topic of inadequate power supply not justify its own BEP hearing?
10. Doesn't extending this construction timeline, with the inadequate secondary power supply confirm that the License is now in violation of the condition in the MEPDES permit that requires the facility to demonstrate adequate emergency power within 30 days of issuance, which is now over 17 months ago?
11. How does extending this permit without addressing the primary and secondary power fatal flaws not conflict with the "no adverse impact" decisions stated in the SLODA Findings and Order?
12. Is it DEP policy to extend each and every License regardless of obvious changes in the permitting assumptions that were used to obtain the License, simply because an extension is a common request as noted in the letter? If not, what would cause a License not to be eligible to be extended?

These questions are intended to be very basic, so you need not provide detailed explanations or answers. We are just looking for guidance on the next possible steps. Please provide a response within four business days, so we can reply in a timely manner and within the confines of the process you provide in your pending response.

Thank you.

-Mike Lannan
NVC Liaison to the DEP
For Nordic Aquafarms

Michael T. Lannan, P.E.
President

TECH ENVIRONMENTAL
Focused Knowledge. Real Solutions.

Tech Environmental
33A Front Street
Belfast, Maine 04915

Phone: (207) 323-4850

mLannan@TechEnv.com
www.TechEnv.Com

From: Muzzey, LynnMs. Bensinger <Lynn.Muzzey@maine.gov>
Sent: Wednesday, May 18, 2022 1:22 PM
To: Steven Whipple <swhipple@mainelyenvironmental.com>; erik.heim@nordicaquafarms.com
Cc: Barry A. Costa-Pierce <bcostapierce@une.edu>; Bensinger, Peggy <Peggy.Bensinger@maine.gov>; Boak, Scott <Scott.Boak@maine.gov>; Brewer, Angela D <angela.d.brewer@maine.gov>; Burke, Ruth A <Ruth.A.Burke@maine.gov>; Callahan, Beth <Beth.Callahan@maine.gov>; Carrie Byron <cbyron@une.edu>; Charles Tilburg <ctilburg@une.edu>; Crawford, Jeff S <Jeff.S.Crawford@maine.gov>; DPerkins <DPerkins@curtisthaxter.com>; DEP, Nordic Aqua Farms <NordicAquaFarms.DEP@maine.gov>; Diane Hunt Braybrook <dbraybrook@yahoo.com>; Dionne, Cindy L <Cindy.L.Dionne@maine.gov>; Donald Perkins Jr. <don@gmri.org>; Donna Broderick <dl_broderick@hotmail.com>; Ed Cotter <ec@nordicaquafarms.com>; Eleanor Daniels <ellie@greenstore.com>; Elizabeth M. Ransom <elizabeth.ransom@ransomenv.com>; Gilbert, Jane <Jane.Gilbert@maine.gov>; Hallowell, Dawn <Dawn.Hallowell@maine.gov>; Hinkel, Bill <Bill.Hinkel@maine.gov>; Jacki Cassida <jc@nordicaquafarms.com>; Jensen, Laura <Laura.Jensen@maine.gov>; Joanna Tourangeau <jtourangeau@dwmlaw.com>; Kavanah, Brian W <Brian.W.Kavanah@maine.gov>; k.ervintucker <k.ervintucker@gmail.com>; Lawrence Reichard <reichard@gmail.com>; Livesay, Nick <Nick.Livesay@maine.gov>; Marianne Naess <mn@nordicaquafarms.com>; Martin, Kevin <Kevin.Martin@maine.gov>; Mike Lannan <mlannan@techenv.com>; Northport Village Corporation <nvcmaine@gmail.com>; Ostrowski, Kevin <Kevin.Ostrowski@maine.gov>; Peter Tischbein <peter.tischbein@usace.army.mil>; Wood, Gregg <Gregg.Wood@maine.gov>; Kennedy, Eric

<Eric.Kennedy@maine.gov>

Subject: A-1146 Nordic Extension

Mr. Heim and Mr. Whipple,

Attached please find the Department's response to the request from Nordic Aquafarms Inc. for an extension to the period to commence construction contained in the air emission license.

Lynn Muzzey, P.E.
Bureau of Air Quality
Dept of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

May 16, 2022

Lynn Muzzey, P.E.
Bureau of Air Quality
Dept of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

Re: Nordic Aquafarms A1146-71-A-N Permit Amendment Request

Dear Ms. Muzzey:

We received an email from Nordic Aquafarm's consultant on Monday, May 9, 2022, via a posting to the list serve. This was our only notification of this request. I provided a courtesy email to you that evening noting that we would be providing comments within two weeks explaining why this request should be rejected, and the permit allowed to expire.

The next day, I was informed that the comment window would be less than the two weeks anticipated, as a decision was to be made by the Department by May 19th, or within ten calendar days, and any comments would need to be provided sooner, in order to be reviewed by DEP in time. As a result of your email, and with no firm date provided, this letter was drafted and submitted herein within seven calendar days of the notification from Nordic Aquafarms (the Permit Holder) of this request.

We apologize in advance for any typos or omissions in our haste to comply with the schedule provided, and would like an opportunity to address them, or any questions or concerns that arise between this comment letter submittal and the decision date. In the interest of time, this letter includes footnotes to the new information available that Nordic has provided since the Orders were issued and prior to the permit amendment request. I am sure that Nordic can provide some or all of them electronically, directly to DEP if desired, as most of them are their work products, or regulatory processes that involve Nordic.

I am providing this letter on behalf of the Northport Village Corporation (NVC) which has joined Upstream Watch in the hearing and appeal process, and in tracking Nordic's efforts beyond the Permit Orders and their responses to conditions. It is presented by me, a registered Professional Engineer who specializes in this type of air permitting work, on my own company letterhead for formality.

As stated throughout the Nordic permitting process, The Northport Village Corporation has not formally taken a stance "for" or "against" the Nordic Aquafarms project. There are varying positions between NVC residents as to whether the potential consumption of natural and manmade resources proposed by Nordic is reasonable or appropriate for the area. One common thread from everyone in the NVC is that the project can only be allowed if the facility has clearly demonstrated that it can satisfy their permitting assumptions, and meet the environmental permitting criteria required as a result of those assumptions.

Unfortunately, as this letter points out, with more recent calculations provided by Nordic, Nordic completely missed the mark on their emergency power demand needs, the ability to connect to their primary source of power assumed within a normal and reasonable timeline for permitting, and claiming that some of the obvious air emissions are “not easily quantifiable”, but then providing calculations quantifying those exact air emissions for an identical project elsewhere (between the permit issuance and this request for a permit amendment).

Nordic ignored the requirement to provide all of its equipment and emission units for the entire facility as required for all applications. As a result, Nordic never met the minimum air permitting requirements for approval, and conditions were drafted that may, or may not be deemed legal by the court system, but that is not the topic of this letter. The courts will decide whether Nordic provided enough information on the record for BEP to make its original Order determination, and we reserve our rights under that effort elsewhere. However, some of that missing equipment and air emission unit data has now been provided publicly by Nordic. This data must be considered first as to how it would affect the potential approval of the request to amend the Permit Holder’s Air License, in public discussions with Intervenor input, before any permit extension could be considered or properly conditioned.

This letter includes public information that was provided by Nordic during the last 18 months during their approved construction window for this project. It clearly demonstrates that Nordic could never possibly meet this construction window, based upon their assumptions made during permitting. This letter is intended for the purpose of creating a record for this request by the Permit Holder to amend its air permit to alter a condition. As you will see below, it is impossible for this request to be granted based upon at least four issues, and therefore DEP’s only viable option is to let the Air License expire. These issues are discussed further in reverse order.

1. Nordic did not follow the proper notification procedures for permits issued that have been under appeal within three years since issuance.
2. Nordic did not originally examine any of its secondary emission units because they claimed they were “not easily quantifiable”. Based upon more recent information for Nordic, they can and did quantify them elsewhere since the permit was issued, and therefore that can and must do so, based upon this new information for any permit modification requests. They need to present their new actual emission rates, to determine their potential compliance with the Ambient Air Quality Standards, and so that DEP can calculate their new future permit fees before the permit can be modified.
3. Pertinent design information has been provided publicly by Nordic, or from regulatory agencies, that confirms that Nordic cannot meet its originally proposed use of this permit with respect to “peak shaving”. That cannot be cured by extending this permit for 18 months.
4. Pertinent design information has been provided publicly by Nordic, or from regulatory agencies, that confirms that Nordic cannot meet its originally proposed use of this permit with respect to “emergency power” that cannot be cured by extending this permit for 18 months.

“Emergency Power” Needs Cannot be Met Based upon Demand Information Provided Publicly by Nordic Since the Permit was Issued

During the permitting process Nordic was asked by DEP on a number of occasions for their actual power demands, but they refused to provide it. In a formal comment letter from the NVC, authored by me on February 18, 2020, near the end of the public input process, I highlighted the importance of Nordic’s missing power plant supply and equipment demand information to date in the application record.

“It is our experience that Applicants that possess the proper Technical Ability to design, construct, operate, and maintain power plants that produce enough electricity for tens of thousands of households, provide much more equipment design data, many more operating and “what-if” scenarios, and significantly more construction sequencing in their application to demonstrate that compliance is possible in all scenarios, and that there is adequate design information provided so that detailed terms and conditions can be applied.”¹

The reason why Nordic’s demand information is not in the original record is not important for forming this record for the permit amendment request, but the fact remains that their power demand is not in the original permit application record. Since it is now publicly available, DEP must examine the implications of this new information before it could possibly consider any changes to the conditions of this air permit, or any permit for the facility. Unfortunately, this new information confirms that the project can no longer function with the assumptions and claims made as the basis for the three permit Orders issues together. What could be considered a “simple construction extension request” for an Air License must now first address the obvious deficiencies created by the disclosure of this new information.

After careful evaluation, it does not seem plausible that the gap between the newly identified operating conditions and the original permitting assumptions can be cured at all, much less by a simple request for a time extension. There were no calculations, explanations, or revised assumptions included with this request, so DEP must provide a formal Request for Information (RFI) and allow the public to propose questions and concerns to their responses. Unfortunately, Nordic did not start this permit amendment request early enough to allow for the required information to be formally submitted to the record for this permit amendment, so the permit will expire on May 20, 2022, before DEP can complete the proper process.

The NVC is completely opposed to any permit extension that does not formally address the newly revealed gap between their “normal” emergency power supply and their “normal” power demand, first and foremost.

Since the permit was issued, and prior to the permit amendment request, Nordic was required to provide its minimum, average, and maximum power demands to the City of Belfast as a Permit Condition within one year. On or about December 22, 2021, Nordic provided only what they referred to as their “normal” power demand of 32 MegaWatts (MW) to the City of Belfast².

¹ <https://www.maine.gov/dep/ftp/projects/nordic/comments-parties-non-hearing/Lannan%20-%20Tech%20Environmental%20Technical%20Ability%20Statement%20current%20as%20of%202021-18-2020.pdf>

² Letter from Nordic to the Planning Board On or about December 22, 2021

Previously, on December 17, 2020, nearly one month after the Orders were formally signed on November 19, 2020, Nordic provided a vague, one-page letter to DEP in an attempt to satisfy Standard Condition E.1(b) of its MEPDES permit (ME0002771). Condition E.1(b) requires that within 30 days of approval Nordic demonstrate that it had sufficient emergency power. Nordic attempted, but failed to do so, in this short letter. The crux of the attempt was to repeat a description of their power plant supply:

“This system will consist of eight (8) 2-megawatt diesel generators in an n+1 configuration, meaning 7 can be operated at a given time with an additional generator for redundancy to improve system resilience.”³

This statement by Nordic in December of 2021, reiterated that Nordic permitted a maximum of seven (7) engines to operate at any one time with a maximum capacity of 2 MW of power each, which was already known via the DEP air permitting process. But how does one demonstrate adequate redundancy with an emergency supply statement alone? This statement could not possibly by itself demonstrate sufficient emergency power.

In this letter, just like at the hearings, Nordic sidestepped the need for providing their actual demand, by defaulting to a very vague rationalization that they could match their power demand to the available supply. Given that the DEP did not know the actual demand at the time, based upon Nordic’s letter, it is possible that DEP assumed that Nordic was indirectly inferring that it could provide “nearly all” of the power demand to meet its emergency needs, as the letter goes on to state:

“In the event of external power interruption to the facility, the proposed electrical generation system is sized sufficiently to maintain operation of critical processes, including but not limited to fish rearing processes and equipment, and water intake and discharge treatment infrastructure.”

Although 14 MW may seem like a lot of power, stating that “*the proposed electrical generation system is sized sufficiently to maintain operation of critical processes*” does not satisfy the condition. To demonstrate adequate redundancy and reliability their actual numeric power demand is also necessary.

Since there is really no justification for not simply stating “***we will have a “normal” power demand of 32 MW***” as they did to meet the City’s similar condition a year later, we anticipate that Nordic will react to this letter highlighting their inadequate response with their typical reaction. Nordic will likely argue that just because their statement is vague, it doesn’t mean that there is NOT adequate power. And while that approach might have worked for them at the time of permitting, that is not the requirement of the Standard Condition E.1(b) that Nordic agreed to meet.

While Nordic’s efforts to shift their burden of proof on to anyone, including DEP, that tries to question the vagueness or incompleteness of their submittals, can be a way to get past the first permitting hurdle, because in most cases it is impossible for someone providing basic questions and concerns about missing information to “prove” that the missing information would lead to an incurable deficiency. However, at this point in time, it is not the NVC’s or DEP’s burden to prove that Nordic cannot meet condition E.1(b) with their vague statements. It is Nordic’s responsibility to demonstrate that they could actually meet each and every condition, since they have to have the information now or they cannot build their facility.

³ Letter from Ed Cotter, Senior Vice President of Nordic Aquafarms to Gregg Wood, Bureau of Water Quality, December 17, 2020 (no title)

Not providing and vetting information requested at the time of permitting is not without risk. Eventually, the proposed systems do actually need to be specified and the conditions met. Eventually, Nordic can no longer kick the can down the road. It is now that point in time for Nordic. Condition windows are closing and information provided is still incomplete, or information coming to light is causing unforeseen problems. Ultimately, as the actual design information and actual equipment needs become available, potential fatal flaws that could be identified earlier in the permitting process must be addressed now, but still within the confines of the agreed conditions. Although new information that comes to light that is in conflict with original assumptions may often be treated as “water under the bridge” for a Permit Holder with respect to the conditions of the permit in hand, the risk is very real that it could prevent the possibility to amend a license without formally addressing it.

If the new information highlights a true fatal flaw, as is the case here, the new information must be considered and the fatal flaw must be cured, before any permit amendment could be considered. It is unacceptable for this permit extension to be considered with Nordic’s previously unreported and unknown risk taken by providing inadequate emergency power capacity. In this case the fatal flaw is so potentially egregious to the NVC and the local area in general, the Air License should be rescinded, but given that the Air License will expire in one week, as long as DEP takes no action on the permit amendment request, the permit will expire, and the fatal flaw will be cured automatically.

The fatal flaw is this section of this letter is insufficient power reliability and redundancy. Although it was impossible for anyone voicing concerns about Nordic’s ability to provide reliability and redundancy, based upon the limited information in the original permitting record, to “prove” that the concern could be a fatal flaw, that is not the case anymore. The record for this amendment, which must include this letter, and the pertinent new design information referenced herein, which Nordic can provide directly to DEP, because it is either their direct calculations, or regulatory agency responses to information they provided as part of their continued project development.

One such source of new information is PUC Docket 2011-00138⁴. It has many public documents that reference the problems that Nordic Aquafarm’s ever increasing power demands have caused, but some of the details are formally redacted. The redacted sections can be somewhat tricky to understand, but it is possible to piece it together and determine when the record is describing Nordic, since their project demands are so large and unique.

To parse out Nordic’s very vague attempt to “demonstrate adequate emergency power”, Nordic claimed in their letter to DEP that they need to maintain fish rearing (which includes the recirculation pumps for the tanks to maintain oxygen transfer to the grow modules and to maintain wastewater treatment in the tanks, as well as force wastewater to their treatment plant intakes), smolt and fry rearing (which requires oxygen almost continuously or they will die)⁵, and the water and wastewater treatment process as stated. What else is there? Chiller operations? Possibly, but only for a limited period of time. Office HVAC? Select pumps? Possibly. But how much could those items really reduce the power demand? The answer is clearly not much. Essentially, Nordic may be able to shave its power demand, but it needs nearly all of their “normal” demand to function for any period of time for more than an hour or so.

Unfortunately, DEP could not determine whether Nordic proposed to supply close to their demand or not, because Nordic never provided this demand information. We now know that during an emergency Nordic

⁴ <https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2011-00138>

⁵ https://nbcmontana.com/news/local/fish-die-due-to-hatchery-power-outage_20160509154614162

can only provide a fraction of their demand if one compares their “normal” supply and the “normal” demand. Therefore, Nordic cannot function in an emergency condition, and the permit assumptions required to meet the needs of all permits combined, so this permit should be allowed to expire. It should not be extended, because more time will not cure their emergency power plant deficiencies, as permitted, and there is nothing provided in their request to amend the permit to cure these deficiencies.

So, at this juncture, either Nordic’s water permit conditions cannot be met, or the air permit is deficient. One of the two must be modified, and since the power plant is inadequate, it makes sense for DEP to simply let the Air License expire and require Nordic to re-permit an emergency power plant with a new design that can provide enough power to meet its “peak” demand, which will be its “normal” demand, plus a peaking factor for variability in an emergency, to demonstrate compliance with Condition E.1(b) of its MEPDES permit (ME0002771).

This adequate emergency power standard condition is required within 30 days of a MEPDES permit approval because it is crucial to the viability of any project. The project cannot move forward if it cannot be met. If DEP does not allow the Air License to expire and grants an extension to air license, then MEPDES permit (ME0002771) should be revoked for Nordic’s failure to demonstrate that it can comply with standard condition E.1(b).

Typically, if a project proponent had provided the required information at the time of permitting, there would be nothing new for DEP to review at this juncture and the proponent could simply notify DEP and any appellate that there was no new information, and the permit could be easily amended to extend the construction window as all three permits together with one being extended, would still result in a facility that would comply with all conditions, as formally ordered November 19, 2020. Unfortunately for DEP, the City, the NVC, and other concerned citizens, Nordic did not take that clear pathway open to them but instead refused to provide critical information (such as when the BEP requested to know their power demand).

There is no one to blame here for the added level of effort necessary now to amend the permit other than Nordic. Instead of providing their power demand when requested, Nordic waited, and publicly provided their 32 MW normal demand after the permit was issued a year later, and before this request to amend a condition was made. As a result, DEP and/or BEP must now consider this new information, and other pertinent new details as part of this permit amendment record to see if it could, or should, condition an extension to the construction timeline so that the project would meet the permit limits with original assumptions and restriction proposed.

As described in Nordic’s letter with respect to Condition E.1(b) to DEP on December 17, 2021, their power plant will be capable of providing up to 14 MW as their maximum power supply from each duty engine. Regrettably, Nordic did not provide their “peak” demand to compare to their “peak” power supply of 14 MW, so the 14 MW needs to be “normalized” for an apples-to-apples comparison to see if the power plant as permitted can meet Condition E.1(b). The 14 MW is not the “normal” power supply, because all diesel engines cannot be run under maximum load in all potential operating conditions. Diesel engines provided for emergency power only can be considered to operate on occasion at maximum load, but it is not recommended, and more importantly, the air permitting need and assumption was not exclusively for “emergency power”. It was for engines for both “emergency power” and “peak shaving”. In fact, the original application suggested that the primary use was for peak shaving purposes, which will be discussed later.

In the power industry, engines have different operating limitations and emission factor guarantees based upon the “mode” of use from “emergency” only to “continuous” use. A diesel generator used for “peak shaving” classifies the diesel generator operational mode as a “prime” mode of operation. Engines that run in “prime” mode operate more often and for longer periods of time than emergency only engines, so they cannot run at maximum power without voiding their warranty, which would also void any of the Tier IV emission rate guarantees required in the Order. Therefore, this permit needs to be revoked if the power plant “normal” supply is intended to be the maximum capacity of 14 MW, because an assumption of any ability to provide 14 MW of continuous power up to the fuel restriction is flawed.

The actual power supply from these “prime” engines will be around 10 MW to maintain the guarantees necessary to meet the Tier IV air emission requirements as permitted. Typically, diesel engines are specified for an average-to-maximum power output of 75 to 80 percent to be able to maintain their emission factors over the engine life expectancy. Although this concern was voiced by Intervenor at the hearing, it was denied by Nordic’s experts at the time as not being required. Luckily, you no longer have to consider our word for it. Since the permit was issued, you can now take Nordic’s word for it.

Nordic has often referred to this project as the “first of its kind” to use that statement as a tool to suggest that their theoretical assumptions are all that can be provided to DEP to meet the permitting requirements. If that is so, then DEP need look no further to see the proper usage factor than Nordic Aquafarms theoretical assumptions for their next project proposal. I will refer to Nordic’s permitting in Humboldt County, California as “Nordic 2.0” in this letter and to the same facility design layout originally proposed in Belfast as “Nordic 1.0” for clarity.

As part of the EIR process for Nordic 2.0, they provided an air quality and energy section in their application. Maine DEP should be very proud of the obvious lessons learned by Nordic from Nordic 1.0 that are peppered throughout the Nordic 2.0 application from your efforts reviewing, questioning, and conditioning their proposal in Belfast. They clearly learned a lot and made much more realistic assumptions. Now, however, for Nordic to alter any permits in Maine for Nordic 1.0, it must use their own new materials that have refined since the Order date for both projects, to cure deficiencies that are now obvious with the refined assumptions proposed for Nordic 2.0.

Within the Nordic 2.0 application process, as shown in the calculation in the appendix in Section 10, on page 129, Nordic proposed its “normal” operation of its engines only for emergency power, at a load of 18.4 MW, or 73%⁶, not 100%, of the engines output capacities. Nordic now understands that one cannot run an engine at 100%, just as one cannot operate a car with the gas pedal fully depressed at all times. If that were to occur all the time, the engine would malfunction.

So applying the Nordic 2.0 “normal” engine operating factor of 73% to the Nordic 1.0 power plant engines, the “normal” power supply can only be 10 MW, or only 35% of Nordic’s “normal” demand of 32 MW recently revealed for Belfast.

Nordic has repeatedly said it could operate at less than “normal” demand during an emergency, so its power plant need not match its “normal” or “peak” electrical demand, but at no time was there ever a discussion of only one-third of the “normal” demand. This new information must now be considered as to the feasibility of the facility operating properly before the implication of any proposed permit extension could be considered.

⁶ <https://humboldt.gov/DocumentCenter/View/102316/Appendix-B---CalEEMod-Modeling-Results-PDF>

Nordic reiterated that they could operate with less than “normal” supply in their letter from December 17, 2021 in response to Condition E.1(b), but did not provide a very simple ratio of what the reduce mode ratio would be or the demand would be. They also did not supply any information on how the “normal” 10 MW supply could maintain operations to keep its fish alive and its system in biological balance to satisfy Condition E.1(b) during permitting, but it is now clear that there is insufficient emergency power available on an hourly basis to meet their proposed needs, and therefore the three sets of conditions of the three Orders formally signed on November 19, 2020 cannot be met.

Again, the processes proposed and even the building configuration are nearly identical for Nordic 2.0 in California. Nordic 2.0 is proposing to rear slightly less fish and it is not up on a hill, and that is likely why Nordic is proposing a lower “normal” power demand of 22.3 MW, and an emergency power supply of 18.4 MW. With their normal demand stated in their energy section as 22.3 MW, in Image 3.5-4: Kilowatt use by functional area from the Project, on page 4⁷, Nordic 2.0 demonstrates that they need 83% of their “normal” power demand in emergency mode.

So now we have Nordic’s power ratio assumption that could be used to demonstrate compliance with Condition E.1(b) of its MEPDES permit (ME0002771). If we apply the Nordic 83% power factor provided for Nordic 2.0 to the “normal” demand of 32 MW for Nordic 1.0, then Nordic 1.0 needs approximately 27 MW of power, to which Nordic 1.0 can only provide 10 MW. By using Nordic’s own assumptions their Belfast power plant is undersized by a factor of 2.7.

In the Nordic 2.0 energy section, Image 3.5-4 referenced above that included Nordic’s “normal” power demand is actually a pie chart that also provides the percentage of total power estimated for process grouping. So, since it is always good engineering practice to try to come at something from a few pathways to see if it leads to the same conclusion, I then tried to validate Nordic’s statement that they could run everything that was “non-essential”. The only real “non-essential equipment” groups are the chillers and the office HVAC. If one ignores the chillers and office fractions in the chart, then the remaining demand is those items required to keep the fish alive and the demand for water and wastewater processing as stated in the December 17, 2020 letter from Nordic. In this calculation Nordic 2.0 would require 73% of the “normal” demand, and with that factor applied to Nordic 2.0, then the emergency power demand would be 23 MW. And again, since Nordic 1.0 can only provide 10 MW without voiding the engine warranties as permitted, the power plant is undersized by a factor of 2.3 for this reduced operational emergency power mode.

Lastly, one more calculation was considered from this Image. It was the, “well, we can always shut down the water supply and wastewater treatment conditions in the event of a power outage or upset condition” scenario Nordic has thrown out at times with no justification as to how it is sustainable. In that case, we only considered two power demand fractions, which are large fish and small fish oxygenation and recirculation to keep the fish alive. The pie chart shows that 53% of the power demand is needed to maintain just the fish rearing and smolt production. Even if Nordic were able to shut off everything at its facility, it would still need 17 MW of “normal” emergency power supply, so its facility is still undersized by a factor of 1.7. In this completely unreasonable and unsustainable “emergency” scenario, where it has shut off all intake water and wastewater discharge, it still cannot provide its “reduced-normal” operations. The lack or redundant power is a serious fatal flaw, as nearly every periodic on aquaculture stresses the

⁷ <https://humboldt.gov.org/DocumentCenter/View/102302/35-Energy-PDF>

importance of a seamless and immediate transfer to emergency power in a way that does not change the biological balance to avoid a catastrophic fish kill.

By applying Nordic's own assumptions, and comparing the facilities in multiple ways, it is clear that Nordic 1.0 in Belfast was not provided anywhere near the emergency power proposed for Nordic 2.0. Nordic 2.0 is only being proposed for emergency power, where Nordic 1.0 is being proposed for the dual purposes of emergency power supply and peak shaving needs. By all calculation methods, it is clear that Nordic has a fatal flaw with respect to actual power supply, and Nordic would need to decide between meeting permit limits and keeping its fish alive.

Therefore, Nordic cannot meet Condition E.1(b) of its MEPDES permit (ME0002771), and all three permits shall be null and void. The best alternative is to let this air permit expire, and to have Nordic provide a new application with the proper power plant design to meet their actual power demands.

“Peak Shaving Power” Needs Cannot be Met Based upon Demand Information Provided Publicly by Nordic and Based upon the Information provided by CMP Since the Permit was Issued

On December 4, 2020, only a few weeks after the Orders were issued, the PUC acknowledged that Nordic Aquafarms cannot connect to the grid without causing unacceptable power supply consequences for the area, which of course, are not allowed. Within the transcript it states:

*“Meanwhile, CMP received a Nordic Aquafarms load interconnection request to serve a proposed new facility in the Belfast area. CMP coordinated the load interconnection information with ISO New England for the CMP approach to the PUC in January 2020 and conveyed the urgent need to rebuild Section 80 based on the Nordic Aquafarms request.”*⁸

Later in the same hearing the discussion shifted to three options that were explored to provide power to Nordic for Phase One of their operations initially.

*“The option three addresses the reliability need in the area, and it supplies the reliability need of phase one of Nordic Aquafarm operations.”*⁹

Unfortunately, Nordic had an opportunity to save everyone involved at CMP and the PUC docket a significant amount of time and energy by explaining that any approach considered that did not provide all the power needed for both of Nordic's Phases initially would cause a fatal flaw in their DEP permits as ordered. George Baker, for Gridworks Consulting LLC, Nordic's sustainability consultant was on this call, but did not provide this critical information to those examining the options on the call.

Although the original supplemental studies performed for the power plant air application were addressed to Mr. Baker's firm as potential appendices to a sustainability report, Mr. Baker was completely shielded

⁸ <https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2011-00138>, Item Number 378, titled “Transcript 12-4-20”, page 11

⁹ <https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2011-00138>, Item Number 378, titled “Transcript 12-4-20”, page 13

from DEP during the DEP permitting process and provided no expert testimony. Based upon what we know now, this omission was most likely because of what Mr. Baker knew directly about the fatal flaw Nordic made by applying for its air permit for their secondary source of power, while there was no clear pathway to resolve the inability to obtain power from their primary source of power assumed. The secondary power assumptions and permit condition are completely void and unattainable if there is no primary source of power.

On this call, Mr. Baker should have pointed out that the three options considered must result in the proper calculations for grid resiliency for both Phases as permitted together with DEP. Had the potential power supply phasing restrictions necessary to get Nordic connected to the grid been provided to the DEP record at the time, DEP would have had no choice but to condition each permit approval for Phase One construction and operation, only, and required Nordic to come back for Phase Two when that power supply was made available.

Nordic's air permit was Ordered for approval to provide Peak Shaving with a stated assumption that the grid would meet its primary power demand at least 90% of the time for its full build-out (by proposing and accepting a maximum 10% annual fuel restriction). With no ability to connect the primary source of power, any extension of this Air License past the originally 18-month construction window that could then allow Nordic to ignore its fatal permitting assumptions for normal supply and build anyway with no primary source of power for their complete build-out as permitted, is completely unacceptable to the NVC.

To be clear, it was Nordic's decision, and Nordic's decision alone, to permit the facility in one effort. Given the complexity of the "state-of-the-art" facility proposed, DEP, The City of Belfast Planning Board, and the public asked Nordic on more than one occasion if they would consider permitting Phase One first, and then Phase Two later, after some actual data had been collected and Phase One was proven successful. This extremely reasonable request and approach would have insured that the initial set of permits could have been improved after they had some direct knowledge of their design and operation at this location. It is now clear that it would have provided another benefit that could have been used to cure their inability to obtain primary power.

A phased DEP permitting approach would have also allowed some phased power supply flexibility too, but Nordic dismissed the request to permit in Phases as infeasible and elected to move forward and permit the whole facility at once. As a result, Nordic limited CMP's ability to help supply them power in Phases all by themselves. Any solution to allow Nordic to connect to the grid without the proper primary power guarantees for their entire 32 MW demand would be conflicting with their DEP permit assumptions and conditions.

The new information gleaned from the PUC Docket over time only gets worse for Nordic. What is now known is that there is insufficient power for Nordic to connect at all even in the illegitimate phased approach discussed above, because the third option discussed in December of 2020, was deemed in the CMP report titled: **Docket No. 2011-00138: Central Maine Power Company's Response to the Office of the Public Advocate's November 1, 2021 Non-Wires Alternative Report** to be:

“...an incomplete solution, leaving significant remaining liability deficiencies on the underlying local sub-transmission system.”¹⁰

Although detailed information, including the name of the new sources being considered, is redacted in the tables provided in their report, CMP is clearly discussing Nordic Aquafarms at the top of page 33 in Appendix C, because Nordic is the only interconnection agreement proposal in this Docket that has been discussed as possibly connecting to the grid in the two-phase approach summarized in the fourth column. The key finding presented in this summation table is in the second column, however. This column is titled:

“Summary of Current Status (reached agreement / in continued discussion / unable to come to common agreement) – add’l explanation as appropriate”¹¹

And for each project interconnect request considered in this Docket, except for the one that is clearly Nordic Aquafarms, they provide the status:

“Reached agreement”

For the one project that was being considered to connect in two phases, (i.e. Nordic Aquafarms), it is the only one in the report where in Column 2 it states:

“Unable to come to common agreement”¹²

So, what this table means is that they have been able to find a way to connect every possible interconnection request in the CMP study, except for the one from Nordic Aquafarms. Put another way, since Nordic’s project was not listed as **“in continued discussions”**, it is now official that there is insufficient transmission capacity to allow Nordic to connect to the grid. As a result, there is no possibility for Nordic to run its facility and meet its permit limits from the primary source of power claimed on the record, without a potential major upgrade to the grid. The timeline for this process will be very long at best, and uncertain at worst, as upgrades can be contested.

In order for any real upgrade to materialize, a potential Section 80 improvement must be formally studied, conceptualized and permitted, funded, designed, installed, or approved. At many junctures along the way, it can be appealed and returned for further study, or head to the courts. What is certain is that Nordic alone cannot cure this fatal flaw themselves via the current air permit amendment they requested, and the permit cannot stand with this fatal flaw identified, and as a result it must expire.

Again, since Nordic chose this site, at the end of an already stressed power supply line, and permitted their facility relying on the existing grid for their primary power, any extension of the air permit that could allow Nordic to build now, without their primary source of power fully available as permitted, is unacceptable to the NVC.

¹⁰ <https://mpuc-cms.maine.gov/COM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2011-00138>, Item Number 399, titled “OPA Final NWA Report re Sec 80”, page 4, para 3.

¹¹ <https://mpuc-cms.maine.gov/COM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2011-00138>, Item Number 399, titled “OPA Final NWA Report re Sec 80”, page 31, Appendix C table begins.

¹² <https://mpuc-cms.maine.gov/COM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2011-00138>, Item Number 399, titled “OPA Final NWA Report re Sec 80”, page 33, line 1.

CMP, the Maine PUC, and ISO-NE are all charged with reaching agreements for connections and necessary upgrades to add new customers, but they cannot do so at the expense of the other customers. There is significant public concern that any upgrade to Section 80 that was not needed at the time of Nordic 1.0 permitting, but is now with their larger demand provided, will result in Nordic's needs "jumping the line" ahead of other projects, that were considered the priority until Nordic's power demand could not be met within the current docket's goals without an upgrade. As a result, there were more than 350 public comments provided to the PUC Docket 2011-00138 insisting that the PUC not approve any significant upgrades immediately, just to provide Nordic with power.

It is very reasonable to ask the question now: Okay, so if Nordic's connection to the grid is going to cause the need for a rebuild, how much is needed? This is the question the OPA has posed. It appears that the current thought process is to oversize the rebuild to allow Nordic to connect as soon as possible. Based upon the number of comments the Docket received, this approach would be a fool's errand, that would likely have the exact opposite effect on Nordic's potential connection schedule, through resistance at every turn, not just from the public but the OPA and any other groups that are interested in actually meeting the Governor's proposed carbon footprint reduction goals. This huge request for power, and the required upgrade, cannot be easily addressed.

While not being able to connect immediately may seem "unfair" to Nordic, it is not discriminatory or unfair. In fact, what actually would be unfair to the ratepayers and the NVC, is any decision to push an upgrade forward without the proper studies just to cure Nordic's site selection fatal flaw with respect to insufficient power available right now, this year.

To be clear though, Nordic like any other company has a right to request and receive power. There is no doubt that eventually provisions to add Nordic to the grid can be made so that Nordic can use power from the grid as their primary source of power, but it is unclear at what cost to Nordic for their share of the improvements and the length of delay to their project is completely unknown.

The real problem right now, with moving forward with any upgrade, is that Nordic has placed themselves in a box selecting this site. Nordic still has not provided any real load data to CMP with their minimum, average, normal and peak power demands, and the times or durations those will occur, as a result it is not possible for CMP to accurately estimate where this potential transmission upgrade falls on the priority list of upgrades.

Of course, part of the uncertainty stems from the fact that Nordic does not yet exist and the PUC has "Reached Agreement" with all the other potential new users, without Nordic's load demand that this upgrade is not necessary. CMP is considering prioritizing Nordic's future need over other existing needs, and can only do so if the incremental benefit for this future user far outweighs the incremental benefit of other existing customers. But if Nordic makes a business decision to not build here, and this upgrade is built based upon the incremental benefit with Nordic, then the PUC and ISO-NE misappropriated limited upgrade funds to a very low priority.

Any upgrade rationale used for this "future demand" must walk a very fine line of "adequate additional" power supply without providing "excessive additional" power supply. There will be many different thoughts as to where this line must be to balance the goals of the docket, the goals of the governor's carbon reduction plan, Nordic's ability and right to connect, and the possibility that Nordic never connects. Unfortunately for Nordic, as one can see, any upgrades to transmission capacity are completely out of the

control of any potential user, so Nordic is correct when they say that CMP, the Maine PUC, and ISO-NE must determine how, when, and where upgrades to high-voltage transmission lines will be made.

While Nordic may not be able to control, or even estimate, when they will be able to connect to the grid, Nordic has other options available to grab some more control of their own “power supply destiny”, such as:

1. Move its project to a location that has adequate power supply for their demands.
2. Provide their own source of both primary and secondary power and operate independent of the grid.
3. Provide a significant amount of their primary power from their own onsite renewable energy systems as originally proposed, but recently eliminated.
4. Provide their own source of primary power, and connect to the grid for a secondary source of power when available, and
5. Provide their own source of primary power and secondary power via a mixture of traditional and renewable power with adequate surplus power, connect to the grid and provide power back to the grid at times to help solve the power outage problems in the area, as Nordic originally proposed as part of their self-proclaimed carbon minimization program.

As of this permit amendment request, instead of coming up with a solution for the area, CMP, and themselves, Nordic has decided to pursue the pathway “**we are lawfully entitled to be connected to the grid and be supplied our requested power**”. While a true statement, this is not a proactive approach, but a reactive approach that they cannot control, and as a result, Nordic cannot justify that this 18-month extension request would be sufficient to cure their primary power supply problems, so the permit must be allowed to expire.

As recently as the December 17, 2021 letter to DEP with respect to Condition E.1(b), Nordic was still promising to provide power at times (up to 4 MW had been discussed publicly before) back to the grid. The last line in Nordic’s letter (emphasis added) stated:

*“This program includes load testing of the generators to ensure proper load transfer from **and back** to the grid.”*

Unfortunately, Nordic announced at the Belfast Planning Board meeting that instead of providing any on-site renewable power, they were not even going to connect to the grid in a manner that would provide power back to the grid. This statement was very curious because it seems to be that Nordic is in a hole and they just want to keep digging deeper. Ironically at this time, the only option available to Nordic is a request to provide power back to the grid and not to pull power from the grid.

And while Nordic is correct, they, like everyone else are entitled to be connected to the grid, that basic right does not entitle them to be connected immediately, or within the 18-month window for this extension request. The burden of proof is on Nordic to explain how the current default assumption from CMP and PUC, can be cured by this extension request. Since Nordic did not cure this deficiency, or even attempt to cure this deficiency, the use of this permit does not meet the needs and assumptions for its use with Nordic’s other permits, so this permit must be allowed to expire.

If Nordic took a proactive approach and decided to provide their own power, they could actually retake control over their potential construction timeline. If the installed sufficient power to provide power back

to the grid at peak times over and above their normal needs to assist CMP as they originally requested of Nordic, they could probably control when they could connect to the grid as well, but neither of those solutions can be addressed with the current self-imposed permit restrictions and power plant capacity as Ordered. Nordic would need to file for a new air permit to supply their own power. Then, if, the grid is potentially upgraded, which is not a guarantee (i.e. the corridor project legal issues), their new permit could revert to “peak shaving” or “prime” mode operation at some point in time.

Please note that if Nordic were to provide power back to the grid for assisting the “end of the line here” especially during power outages, CMP likely can continue to delay the Section 80 rebuild, but with the “normal” demand of 32 MW and its peak shaving capability of only 10 MW for continuous operations, Nordic’s power plant at this point in time, is undersized by a factor of 3.2 or even higher with its own load. At this point, Nordic has determined that it will not provide power back to the grid, and as a result they cannot assist with the default condition they will be causing during a power outage.

It is completely unacceptable to NVC residents to accept any risk associated with this possible permit extension and any additional or prolonged outages it may cause if Nordic starts to build when they feel that the risk is okay for them. There is absolutely no reason that NVC residents need take ANY risk of Nordic’s demand preceding any potential supply improvements, knowing what we know now about the grid capacity and Nordic’s true power demands.

The NVC insists that this permit not be modified and that Nordic file for a new air permit once, and if, any grid upgrade is designed and installed, or if they decide to power their facility in a different manner. As of now, the default position is that they cannot be connected to the grid, and until that fatal flaw is resolved, no permit modifications based upon that faulty assumption can be allowed.

Nordic’s Argument that Secondary Air Emissions from Construction and Operations are “Not Easily Quantifiable” is No Longer True Given that They Provided it for Nordic 2.0

Because the power plant air dispersion modeling resulted in off-site concentrations for Nordic 1.0 were at, near, or above the allowable thresholds for some of the criteria pollutants during short-term averaging times, Nordic should have included the combined impacts of the power plant operating along with the secondary air emissions sources to demonstrate compliance with the ambient air quality standards.

At the time Nordic’s consultant argued, and DEP accepted, that these mobile emissions were “not easily quantifiable” and therefore they could be exempted from the ambient air quality modeling exercise.

However, since that time, for Nordic 2.0, Nordic has in fact easily quantify these air emissions for their California permitting exercise¹³, so any permit modification request here must require Nordic to redo its air emissions calculations and compliance demonstration meeting the ambient air quality standards (which is typically performed via dispersion modeling) to combine the power plant and all easily quantifiable emissions before any permit modification request could be considered complete and ready for DEP review.

¹³ <https://humboldt.gov.org/DocumentCenter/View/102316/Appendix-B---CalEEMod-Modeling-Results-PDF>

In all likelihood, Nordic could use many of the same spreadsheets/canned model assumptions for the calculations performed in California, for use during any additional air permitting requests for Belfast going forward, which would make them even more “easily quantifiable” for Nordic 1.0 permits.

Nordic did not follow the proper notification procedures

I purposely did not put this justification first, because I didn’t want you to think that the whole goal of this letter is some sort of “gotcha” with respect to proper procedure. As an engineer, I always want to focus on the concerns first, but we still also must consider the proper permitting process.

At this point in time, it is clear that there is very real and pertinent new information that has come to light since DEP was put into the position of having to provide permit Orders with extra conditions to fill in Nordic’s holes, or risk being accused of delaying the project. In DEP’s defense, many of our requests for information for air emissions information for air quality, odor, noise, and dust, during the permitting efforts were made by DEP to the Permit Holder (i.e. Applicant at the time), and they went unanswered.

Nordic was asked numerous times to provide its power demand to justify its permitting strategy, but they did not elect to do so. At this time, there seems to be no way to extend this permit without having a hearing to discuss the new information that has come to light. There is not enough time to schedule and hold a hearing, therefore, based upon the tardy notification of the Permit Holder alone, this air permit must expire on May 20, 2022. At this point in time, the rationale for or against this request are immaterial. Due process requires this permit to expire.

This permit is set to expire on May 20, 2022, and based upon DEP’s rules, it was impossible for the applicant to meet its notification requirements between now and then. The Applicant sent this request via email to the listserv on Monday, May 9, 2020, so even if someone tries to suggest that a listserv email blast meets the proper procedures for “mailed” notification in today’s electronic world, it would still be too late for most people to respond, and definitely is too late to schedule and hold the necessary hearing to discuss any potential wording that could allow this extension while still protecting the NVC from a potential fatal flaw in supply.

Since this project was subject to Chapter 3, and the project was/is under appeal within the last three years, it is within our rights per any “proposals to amend” to request a hearing to question Nordic on all the information available since the permit order was issued to voice our concerns. There is no exact timeline provided in Chapter 3, but given that Chapter 2 suggests notifications should occur with a minimum of thirty days, it is clear that the time provided here, somewhere around 7 days (so there is time for DEP to review and decision making on May 19, 2022 per your email), is not sufficient. With the condition providing an 18-month window for construction to start, there was more than sufficient time for the Permit Holder to make this permit request and to allow a reasonable timeline for public input.

Everyone involved in the original hearing process is entitled to notification and therefore the ability to respond and provide input. See reprint of Section 30 of Chapter 3:

“30. Post Decision Notice Requirements. Any licensee receiving an approval following a hearing must provide notice to all parties of the filing of any documents with the department indicating:

A. Actions to comply with conditions contained in the license that require department review and approval;

B. proposals to amend the license one such a proposal was not part of the original decision and is submitted within one year of the decision becoming final or project start date, whichever is later, unless otherwise provided in the decision; and

C. Proposals to amend a license regarding an issue that was the subject of an appeal when the proposal is submitted within three years of the decision, unless otherwise provided in the decision.

The licensee's responsibility under this section is deemed fulfilled when the notice is mailed to a party to a proceeding."

It is not DEP's responsibility to cure the fact that Nordic's request is too late for DEP action. Given the extent of new information provided publicly by Nordic since the record closed and prior to this permit amendment, it is the responsibility of DEP to consider the discrepancies identified with CMP's current inability to add Nordic to the grid, and the lack of any justification in the request that an 18-month extension could cure this concern. For this reason alone, the permit must expire.

The even more obvious problem is that this 18-month extension (or really an extension of infinite time) cannot cure Nordic's inability to supply emergency power at anywhere near its actual demand. Nordic's emergency supply as permitted is not "slightly less" as they insinuated throughout the permitting process but is actually much less by a factor of two to three when examined from a number of different directions and all with calculations based exclusively on information provided by Nordic.

Extending this air permit so that if Nordic desires they could start construction and then potentially connect to the grid for some sort of hybrid power supply scenario with their inadequate emergency power concerns identified, that hasn't been fully vetted or stressed tested beforehand is an even bigger concern for the NVC. Most of the structures in our village are over a hundred years old and we already have problems with pipes freezing, property damage, and difficult conditions during power outages. It is intolerable to the NVC for this permit extension to be approved, without the potential power plant upgrades being fully vetted for Nordic's normal demand versus emergency supply, and to meet the original intent of their promise to the area to help reduce our outage impacts by providing power to the grid for peak shaving.

And lastly, if Nordic truly needs this much more time before construction begins, then there clearly is time to re-permit a design that actually meets their power needs with their lessons learned to date, while potentially extending the permit that has fatal flaws for 18-months does nothing to cure their discrepancies between their demand requirements and their supply capabilities.

Again, the NVC requests no action on the request to amend the permit and that DEP let this air permit expire later this week.

Sincerely,



Michael T. Lannan, P.E.
NVC Intervenor Liaison