Jeff, thanks for your comments. You bring up important issues. Here are my responses to each point:

1. The existing facility is currently a PSD-major source of air pollution based on potential emissions. Has the facility ever reported emitting more than 250 TPY? There is no discussion of comparing past actual to future potential NOx emissions.

This facility pre-dates PSD Rules, and now wants to cap its potential emissions to stay below the major source threshold. I believed that any grandfathered sources that undergoes a modification, would loose its grandfathered status and become subject to the PSD program at the time of the proposed modification, not retroactively. As I interpret the PSD program, a modified grandfathered source would be evaluated as a new source upon modification. That is, a major source would be defined by the magnitude of its potential emissions as a whole and not by the difference between past actual and future potential emissions. Significant increase analysis would be performed only on subsequent modifications after the major source threshold has been crossed (250 tpy NOx for this source). Please remember that in this case the facility is taking a restriction in heat input (fuel consumption) to re-classify as a minor source. The potential emissions for this source as it is currently permitted are much larger than those associated with the requested cap:

Table 1. Unrestricted Potential Emissions. Pump Station S-5A

EU No.	Brief Description
001	Six 1600 hp diesel engines each powering an emergency flood control pump

					Potential Emissions		Proposed Emissions	Net Change in Potential Emissions
Pollutant Name	Fuel	hr/yr	Heat Input (MMBTU/hr)	Emission Factor (lb/MMBTU)	lb/hr	TPY	TPY	TPY
NOx	diesel	8760	72	3.2	230.40	1009.15	247.54	-761.61
CO	diesel	8760	72	8.50E-01	61.20	268.06	37.32	-230.74
PM	diesel	8760	72	1.00E-01	7.20	31.54	2.18	-29.36
PM10	diesel	8760	72	5.73E-02	4.13	18.07	3.29	-14.78
SOx	diesel	8760	72	0.054	3.89	17.03	0.83	-16.20
VOC	diesel	8760	72	0.0819	5.90	25.83	8.76	-17.07
HAPs	diesel	8760	72	2.12E-04	0.02	0.07	4.98	4.91

Notes:
*** All emissions were based on the following:*
a. Emissions factors from AP-42, Section 3.4, 10/96
b. Diesel fuel containing 0.05% sulfur by weight; a density of 7.1 lb/gallon; and a heat content of 19,300 BTU per pound

By taking this cap on heat input, the facility has given back over 760 tons per year potential NOx emissions and 230 tons per year of potential CO emissions that could have been technically and

legally emitted by this source. This reduction in potential emissions constitutes a clear benefit to our airshed and the continued attainment status of our area. Please keep in mind that, unlike expansions in processing rates or production levels, the purpose of this modification is to add flexibility to the fuel supply options for these flood control sources. The replacement of up to 80% of the distillate fuel by a cleaner burning fuel such as natural gas is an example of the environmentally friendly alternatives still predicated by many federal, state and local agencies.

From the historical perspective, Station S-5A has reported the following NOx emissions in the annual air operation report (AOR):

Table 2. Reported Actual Emissions of NOx - Pump Station S-5A

Reporting Year	Actual Emissions TPY
1998	61.71
1999	83.99
2000	58.8
2001	41.95
2002	124.90
2003	86.84
2004	108.33

As you can see, the actual NOx emissions from this facility have never reached PSD Major Source status. Please note that the NOx emission exhibit great variability, as expected due to their dependency on annual rainfall totals. For example, NOx emissions increased over 80 tons between 2001 and 2002 because 2002 was a ”wetter year”. If the past actual to future potential analyses would have been applied to a similar modification in 2002, the cap would have been set at the actual NOx emission averaged over the prior 2 yr period (53.4 tpy) plus the significant increase level for NOx (40 tpy) for a total of 93.4 tons. The cap would have been exceeded that same year (by about 30 tons). For this type of operation were emissions are not only uncontrolled but a direct function of weather (outside the permittee’s control) an actual plus significant cap is not feasible and would result in repeated permit modifications. It is interesting to point out that the permitting process for a newly constructed pump station that is proposing to limit emissions to minor source levels is considerably less burdensome on the applicant than the permitting process for a grandfathered source that is proposing to restrict previously unrestricted emissions to the same minor source level. This holds true, even when potential emissions are being added in the first case and reduced in the second.

In case my interpretation is incorrect, here is the past actual to future actual analysis. It indicates that the facility would exceed the significance level for NOx (40 tpy):

Table 3 - Summary of Past Actual to Future Potential Emissions. Pump Station S-5A.

Pollutant	Proposed Potential Emissions (TPY)	Past Actual Emissions 2 yr. Avg. (TPY)	Net Emission Increase (TPY)	Significant Emission Rates (TPY)	Subject to PSD?
Nitrogen Oxide	247.54	97.58	149.96	40	Yes
Carbon Monoxide	37.32	32.40	4.92	100	No
Particulate Matter	2.18	3.05	-0.87	25	No
PM 10	3.29	3.05	0.24	15	No
Volatile Organic Compounds	8.76	3.43	5.33	NA	No

Sulfur Dioxide (0.5% S)	7.92	4.11	3.81	40	No
Sulfur Dioxide (0.05% S)	0.83	4.11	-2.28	40	No
Total HAPs	4.98	0.23	4.74	NA	No

As a significant modification to a Major PSD Source, this facility would be subject to the pre-construction review requirements of Rule 62-212, F.A.C. including a Best Available Control Technology (BACT) determination and an evaluation of the air quality impacts. This level of permitting is normally conducted by your office in Tallahassee. Please advice what is the best way to transfer this permit application in ARMs and the associated time clock implications.

2. Note that potential NOx emissions from the pump engines plus the emergency generators are greater than 250 TPY.

That is correct. When the potential emission estimates were submitted, the applicant failed to include the contribution from the emergency generators because he considered them insignificant emission units. The heat input cap was established based on the operation of much larger engines (the pump engines). As discussed with the applicant and as specified in both the draft permit and the technical evaluation document, any fuel consumed by the emergency generator will be counted along with the pump engine fuel consumption to determine compliance with the heat input cap for this facility, regardless of the perceived insignificant status of the emergency generators. As currently written, the permit requires that all the fuel used, even when the emergency generators operate beyond 500 hrs/yr, be considered when calculating the facility-wide heat input.

Alternatively, the NOx emissions from the emergency generators operating at 500 hrs can be subtracted from the facility-wide NOx threshold and a new heat input cap can be established to addresses only the pump engines. This could provide an additional (yet relatively small 25 tpy NOx) level of cushion for times when the emergency generators are not used. The corresponding heat input cap would be 140,150 MMBTU/yr instead of 155,880 MMBTU. The corresponding daily averaging threshold would be 88,310 MMBTU/yr instead of 104,040 MMBTU/yr.

As the emission factors used are similar for both the pump engines and the emergency generators (only their specific heat input requirements change), both heat input caps (with or without emergency generators should result in facility wide emissions below 250 tpy.

3. There is no NOx emissions standard with which to demonstrate compliance. It is not appropriate to use AP-42 emissions factors for this project. We need reasonable assurance.

For all other SFWMD pump stations, compliance with the synthetic minor source threshold is demonstrated through fuel usage monitoring. In this specific case, two types of fuels can be used in two distinct configurations (either a 80/20 natural gas and diesel blend or 100 % diesel). To allow the maximum flexibility in specific fuel usage and to avoid capping multiple fuels under multiple operating scenarios, PBCHD and the applicant have agreed to cap heat input instead of a fuel use.

A NOx standard would be established solely to avoid PSD Major Source classification not because it is required by a NSPS or NEPHAP. Although as a synthetic minor facility, compliance with this PSD threshold needs to be assured, a NOx emission standards would require compliance verification through stack sampling. The eight pump stations located in Palm Beach County consist of 34 engine/pump combinations and 17 emergency generators. There is a substantial cost associated with conducting these many stack tests on an annual basis. As the

NOx emissions from these engines are not controlled by a pollution control device, there is very little adjusting, other than regular engine tune-ups, that could alter NOx emissions levels.

Recognizing their function as flood control facilities, these pump stations have been historically permitted though "inventory" operating permits that contained no emission limits or monitoring requirements other than for the need to inform the permitting authority of changes in fuel sulfur content. The issue of stack sampling to monitor the major source threshold was first discussed with DEP's Southeast District Office during the issuance of the construction permits for pump stations G-370 and G-372. These facilities proposed to establish a fuel consumption cap to limit NOx emissions just below the PSD major source level. Although the estimated NOx emissions were dangerously close to the 250 tpy threshold, the use of AP-42 emission factors was supported by the Department as long the facility could validate the NOx emission factors through stack tests and the frequency of monitoring is increased when monthly rolling 12-month totals approach the cap. Provisions for re-opening the permit to adjust the fuel cap based on verified NOx emission factors were also included in these permits. The emission factor verification tests are to be repeated every 5 yrs (upon Title V permit renewal) unless the permittee can document that the yearly fuel consumption for the prior 5 years has not exceeded 80% of the corresponding fuel caps.

The emission factor verification tests were conducted on six representative engines at four pump stations in June and August 2004. The results indicated that for these Fairbanks-Morse engines, the actual emission factors were significantly lower (39% on average) than the AP-42 emission factors. Please see attached test results.

4. There is no initial or periodic test requirement to demonstrate that the engines are complying with the NOx standard.

Good point. Technically speaking, only the AP-42 emission factors for distillate oil were verified during the emission factor verification testing (see attached). The source has agreed to conduct similar emission factor verification tests while combusting the 80/20 fuel blend. The draft permit will be modified to incorporate the initial emission factor verification testing as well as the 5-yr re-verification requirements. In addition, the draft permit already contains provisions to increase the frequency of monitoring as monthly rolling 12-month totals approach the heat input cap.

5. The potential NOx emissions are being synthetically limited just below 250 TPY. We typically require NOx CEMS for such cases or at least some type of monitoring.

The NOx emissions are being monitored through fuel consumption and emission calculations using the following tier approach:

a. Monthly, as long as the rolling 12-month total heat input is below a threshold level equivalent to cap level minus the potential heat input for one month. (about 91% of the cap).
b. Daily, as long as the rolling 12-month total heat input is above the threshold level discussed above. The frequency of the total heat input monitoring can revert to monthly as long as the rolling 365-daily heat input fall below the threshold a consecutive number of times.

As NOx emissions are not controlled by an air pollution control device, we do not expect any sudden equipment malfunction to spike NOx emissions. NOx emissions could change over time as a result of the wear and tear on the engines. Regular engine tune-up should minimize these changes. In sum, we do not anticipate that the emissions of NOx would fluctuate frequently enough to justify the use of a CEM to monitor emissions.

As seen in Table 2, the highest actual emissions of NOx reported were 124.9 tpy in 2002. These emissions are 50% of the synthetically limited NOx emissions. In addition, the emission factor verification tests conducted in July and August 2004 concluded that the AP-42 factors

overestimate NOx emissions by almost 40 percent. The use of conservative emission factors along with the low probability of operating near the established heat input limits provides us with reasonable assurance that this facility could have NOx emissions corresponding to a PSD Major Source.

6. Although you've "stepped up" record keeping for fuel consumption when they exceed a certain throughput, the enhanced monitoring is not specifically related to emissions.

Heat input monitoring is no less related to NOx emissions than fuel consumption. As you know, fuel consumption has been used to monitor emissions in a variety of permits. For example, these parameters are currently used to define the following categorical exemptions for combustion sources:

- Fossil fuel steam generators – Rated heat input and fuel consumption.
- Home heating and comfort heating - Gross maximum heat output.
- Emergency generators – Fuel consumption.
- Heating units, ICE, or other combustion devices - Fuel consumption.
- Burning of drugs seized by law enforcement agencies in boilers – Heat input.

At the Federal level, many combustion sources such as boilers are classified by their maximum design heat input capacity. Consequently, in some cases the maximum heat input capacity defines NSPS standard applicability.

For these engines, the heat input calculations are not to include contributions from preheated combustion air, re-circulated flue gasses or exhaust gases from other sources. For all practical matters, it is the fuel consumption that will continue to be monitored. Using the heat content data supplied by the fuel vendors, the permittee will then calculate the fuel heat input for the facility over the specified period of time. To offer a more direct correlation to NOx emission, the draft permit could be amended to require that the monitoring spreadsheets be expanded to include estimated NOx emissions associated with the calculated heat input. I do not think that this is to technically demanding or financially burdensome. However, please keep in mind that to be consistent, we may need to re-open the other 7 permits to include similar requirements.

7. We don't know the "before" NOx emissions rates are when firing only oil; you have assumed AP-42. We don't know the "after" NOx emissions rates when firing a blend of natural gas and oil.

Please see answers to items No. 3 and No. 4.

If you still object to our approach or have any additional concerns about conditions in the draft permit, please contact me at your earliest convenience to set up telephone conference to further review these issues.

Sincerely

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