25 May 2015

Mayor Rod Buhr
Wellington Council
PO Box 62
WELLINGTON NSW 2820

Dear Mr Mayor,

ERM appreciates the opportunity to engage with Wellington Council and the NSW Government in respect of the Wellington power station project. There has been recent correspondence from Wellington Council (dated 20 April 2015) where Wellington Council seek resolution of two issues prior to the Department of Planning and Environment (**"DP&E"**) finalising the Wellington Power Station modification application. ERM understands these two issues to be:

1. Clarification of an apparent anomaly in one set of noise assessment results; and
2. Mandating the formation of a Community Consultative Committee for the project.

With respect to the apparent anomaly in previous noise assessment results, please refer to attached documentation prepared by WSP-Parsons Brinkerhoff which outlines the results of an investigation into the apparent anomaly. In summary:

a. the December 2013 memo was prepared to support ERM's modification application number 2;
b. the two tables in the December 2013 memo were prepared on different bases in response to the NSW Environmental Protection Agency (**"EPA"**) revised noise assessment criteria, in particular methodologies relating to low frequency noise; and
c. in any respect, the December 2013 memo has been superseded and is no longer relevant by virtue of a change to the noise assessment criteria adopted by the NSW EPA and NSW DP&E. As a consequence, if the modification application is approved by DP&E, the proposed two unit development complies with the more contemporary and stricter noise assessment criteria.

With respect to the formation of a Community Consultative Committee (**"CCC"**), ERM is positively disposed to the use of CCCs having used a very similar process for ERM's Neerabup project. Given the history of the project, and ERM being unable to give firm guidance with respect to project construction timetable, ERM considers that separate pre-construction and construction phase regimes are more appropriate. On this basis, ERM is prepared to commit to:

i. Pre-Construction – ERM will communicate with the community through regular advertised community "open forum" information sessions (one (1) meeting per year unless agreed otherwise) and a "representative" focus group sessions (two (2) meetings per year unless agreed otherwise). Should the focus group see a need, ERM will also prepare newsletters (two (2) newsletters per year unless agreed otherwise) and fact sheets (as required basis);

ii. Construction – ERM will work with Wellington Council and DP&E for the formation of a CCC, ensuring the Council and DP&E have feedback and input into the CCC representative selection process for formal nominations to ensure wide representation of the Wellington community.

I trust that the foregoing clarifies both matters raised by the Council in its 20 April 2015. ERM further looks forward to the 4 June 2015 community representative visit to ERM's Oakey power station in Queensland, and working with yourself and Councillor Smith on the final details.

Should you have any further queries, please do not hesitate in contacting me.

Yours sincerely,

Wayne Moulday
General Manager Business Development
ERM Power Ltd

Attachments:

1. Parsons Brinkerhoff Memo, Re: Noise memo – discrepancy explained, 13 May 2015

Cc:
Ms Carolyn McNally
Office of the Secretary
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Ms Karen Roberts (Karen.roberts@wellington.nsw.gov.au)
Wellington Council

Ms Karen Jones (Karen.jones@planning.nsw.gov.au)
Department of Planning & Environment

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13 May 2015

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By email
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Wayne Moulday
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ERM Power Limited
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GPO Box 7152
Brisbane Queensland 4001

Dear Wayne

Noise memo - discrepancy explained

At a meeting on 15 April 2015 between Wellington Council, ERM Power and its noise consultants WSP-Parsons Brinckerhoff, representatives of Council referred to the attached memo (Refer Attachment 1) dated 13 December 2013 (which can be found on the Department of Planning Website as a supporting document to ERM Power's current modification application).

Specifically, there was some concern within Council over the apparent discrepancy between the noise data presented. In table 1 of the memo, A-weighted noise impacts are presented. In column 2 of the table, results are presented that include a 5dB low frequency noise penalty for the Siemens 4000F two-turbine development. The results show impacts ranging from 29dBA at the Cadonia subdivision to 37.5dBA at Nanima House.

However, in Table 2, which also includes results for the same Siemens 4000F turbines (and also in adverse conditions), a different set of results are presented in the first column, despite this apparently relating to the same thing.

The key difference is explained by the fact that in Table 1 a low-frequency noise penalty has been applied, while in Table 2 it has not. Further explanation is provided below:

- Table 1 was prepared in 2010, and at that time best practice required that a 5dB penalty was applied to low-frequency noise sources (exhaust stack fin fan noise sources). At the time Table 1 was produced (for the 2010 modification), the application of low-frequency noise penalties was mandatory.
- Environmental Protection Authority (EPA) advice (Industrial Noise Policy, EPA 2000) on the approach to low frequency noise stipulated that an assessment of A and C (low-frequency) scale noise impacts should be undertaken, and if the difference between the A and C scale results is greater than 15dB, then a 5dB penalty should be applied to noisy sources. The intention of Table 2 was therefore to present A-weighted impacts without penalty, with a view to a penalty being reintroduced in the event of a greater than 15dB difference between A and C-weighted results. This would have brought the results back in line with Table 1.

- The reason that this does not result in a 5dB reduction in impacts at each receiver is the fact that the penalty had not been applied across all plant, but had been applied to low-frequency noise sources (exhaust stack fin fan noise sources) only. For example at Nanima House the reduction is only 3dB.

In summary it is acknowledged that the differences between the two sets of data are not well explained, but that there are valid reasons for the differences in results relating to whether or not penalty factors have been applied, as explained above.

Of note, since the memo was issued in December 2013, there has been a further change in noise criteria by the EPA. This updated approach was originally applied by Acoustic scientist Norm Broner of Vipac Engineers for the AGL project at Dalton, and has been accepted by the NSW EPA and NSW Department of Planning and Environment (DP&E) as the new stricter standard for noise licences for industrial facilities in NSW. As a consequence of the new standard, the low frequency noise penalty is no longer used. Instead, a C-weighted assessment is undertaken, and if the results are less than 60dB(C), and if the project (without penalty) also complies with its A-weighted limits, then the project is considered to comply.

The results in the December 2013 memo show that the proposed two unit 4000F Wellington power station facility will comply (with the draft DP&E conditions) at all properties under all conditions for both with regards to the established dB(A) and dB(C) noise criteria.

Yours sincerely

Paul Greenhalgh
Principal Environmental Planner

Encl. Attachment 1 – Memo - Wellington Power Project – C-Weighting Noise Analysis of Siemens 4000F turbines

PARSONS BRINCKERHOFF

Attachment 1

Wellington Power Project – C-Weighting Noise Analysis of Siemens 4000F turbines

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A GRI Rating: Sustainability Report 2011

Memo

Date 20 December 2013

To Andy Pittlik

Copy Paul GreenHalgh

From Aaron McKenzie

Ref 2162434B-ENV-MEM-001 RevA

Subject Wellington Power Project - C-weighting noise analysis of Siemens 4000F units

1. Introduction

Parsons Brinckerhoff Australia Pty Ltd (Parsons Brinckerhoff) has been engaged by ERM power to provide a comparative assessment of A and C–weighted noise impacts predicted for operation of Siemens 4000F Gas Turbine Units at the proposed Wellington open-cycle gas-fired power station (the power station).

This memo has been prepared with reference to the Environmental Assessment; *Wellington Gas-fired Peaking Power Station: Environmental Assessment,* (EA, Parsons Brinckerhoff document reference PR_7345, May 2008), and supplementary noise assessment technical letter; *Wellington power project – noise assessment of Siemens 4000F units,* (Parsons Brinckerhoff document reference LT_1716, March 2010.

2. Low frequency noise criteria

NSW EPA's *Industrial Noise Policy* (NSW INP, 2000) aims to apply correction factors to source noise levels at the receiver to account for additional noise characteristics such as tonality, impulsiveness, intermittency, irregularity and dominant low frequency content anticipated to cause greater annoyance to residential receivers.

Following INP guidance, a 5 dB correction factor is to be applied where predicted C- and A- weighted levels over the same time period differ by 15 dB or greater.

3. Assessment of operational noise impacts

Predicted noise impacts from the operation of the 255 MW Siemens 4000F gas-fired turbines modelled for the supplementary noise assessment (LT_1716, March 2010) are presented in Table 1 below. Noise impacts were determined utilising the SoundPLAN (version 6.5) noise modelling software. Following NSW INP guidance, a correction of +5 dB(A) was added to the exhaust stack and fin fan noise source contributions to account for the low-frequency noise components.

Table 1 **Predicted A-weighted noise impacts for revised two Siemens 4000F gas-fired turbine operations including +5 dB low frequency noise penalty**

Location	Received noise level (dB(A), $L_{Aeq,15min}$)			
	Neutral conditions	Adverse conditions	Allowable noise contribution	Compliance
1. Mount Nanima	29.5	32	39	Yes
2. Cadonia Subdivision	26	29	35	Yes
3. Keston Rose Garden Cafe	28	31	37	Yes
4. Nanima House	**36**	**37.5**	35	**No**

Source: Table 4-2, Page 3, document: LT_1716

Note: Noise levels shown to the nearest 0.5 dB(A)

4. A and C weighting model results

To predict the A and C weighted noise levels Parsons Brinckerhoff re-ran the noise model utilising the March 2010 SoundPLAN model files for adverse meteorological conditions. No penalties were applied to any of the sources. The receiver noise impacts were predicted for both the A and C scale noise weightings. A and C weighted results were then compared to determine whether low frequency corrections are to be applied.

Results are presented in Table 2 below. The difference in A and C weighted noise predictions was greater than 15 dB at each of the receivers.

Table 2 **Predicted A- and C-weighted noise impacts for two Siemens 4000F gas-fired turbine operations without +5 dB low frequency noise penalty**

Location	Received noise level (dB(A), $L_{Aeq,15min}$)	Received noise level (dB(C), $L_{Ceq,15min}$)	Difference (dB)
	Adverse conditions	Adverse conditions	
1. Mount Nanima	30	46	**16**
2. Cadonia Subdivision	26.5	42	**15.5**
3. Keston Rose Garden Cafe	28	44	**16**
4. Nanima House	34.5	50.5	**16**

Note: Noise levels shown to the nearest 0.5 dB

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5. Discussion

Following the approach described in the NSW INP, a +5 dB penalty would be applied to the predicted noise levels at each of the nearest residential receivers as the difference between the A- and C- weighted noise levels were 15 dB or greater.

Yours sincerely

Aaron McKenzie
Senior Environmental Engineer
Parsons Brinckerhoff