VOGHERA ENERGIA

400 MWe COMBINED CYCLE POWER PLANT

VOGHERA (PV) - ITALY

NOISE SURVEY REPORT

ASSESSMENT OF THE CCPP NOISE LEVEL AS A PART OF THE PERFORMANCE TESTS

Foster Wheeler Italiana / Process Plant Division / Tecnological Dept. – Noise Control Engineering

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1.0 SCOPE

The 400 MWe Combined Cycle Power Plant of Voghera Energia, operating at base load, was sound tested by the Noise Control Engineering of Foster Wheeler Italiana on May 6th and 7th, 2005, with the purpose of checking the compliance with the allowable limits imposed by the VIA Decree no. 6906 dated January 8th, 2002 and the articles 3.6 and 4.1.c of the Annex 1 under the Contract between Voghera Energia and Foster Wheeler Italiana. The Sound Test was executed as a part of the Performance Tests, as requested by the Annex 1, article 6, point 6.0.2.C.4 of the Contract.

Scope of this report is to detail the results of the measures and draw the consequent conclusions through the comparison with the applicable limits. This report reflects the draft of the report sent to Voghera Energia with Foster Wheeler Italiana letter no. 2.1-1445 dated May 13th, 2005.

2.0 RESULTS

The results of the performed Sound Test are reported in the following attachments:

- attachment I documents the results of the measures executed on each equipment of the CCPP continuously emitting noise and supplied by Foster Wheeler Italiana;
- attachment II documents the results of the measures performed to characterize the acoustic field at the nearest community locations and at the CCPP fence line during day-time;
- attachment III documents the results of the measures performed to characterize the acoustic field at the nearest community locations and at the CCPP fence line during night-time;
- attachment IV gives information on the utilized sound level meter;
- attachment V reports the active power output of the electrical generator during the sound test.

With regards to the environmental readings, the following table summarizes the equivalent continuous sound pressure levels (L_{Aeq}) rounded to the nearest whole number detected in the seven conventional locations together with the averaged ones recorded in the previous surveys when the CCPP was not yet operating.

Monitoring Campaign		A *C.na Panperduto*		B North Fence		C East Fence		D *C.ne del Conte*		E South Fence		F West Fence		G *C.na La Rotta*	
		day	night	day	night	day	night	day	night	day	night	day	night	day	night
ANTE OPERAM	FWI, January-2000	44	40	49	42	46	39	43	35	42	40	43	42	41	39
	FWI, July-2004	41	54	-	64	-	60	47	60	-	52	-	50	35	39
	FWI, September-2004	40	49	49	50	48	43	56	50	48	47	48	41	40	53
	Phoneco, January-2005	55	54	-	-	-	-	57	42	-	-	-	-	45	38
POST OPERAM	FWI, May-2005	43	48	58	56	56	52	44	43	46	47	53	53	33	45

3.0 LIMITS

3.1 Single Machine

The noise emission from each single machine, operating separately and supplied by Foster Wheeler Italiana, shall not exceed a sound pressure level of 85 dB(A) a 1 m in an essentially free field condition, as per Annex 1, article 3, point 3.6 of the Contract.

3.2 Whole Plant

The noise emission from the whole plant, so including also the acoustic contribution from the SSPT equipment supplied by Ansaldo Energia, shall not exceed the limitations established by the VIA decree no. 6906 dated January 8th, 2002, as per Annex 1, article 3, point 3.6 of the Contract. The following are the limits imposed by the decrees with the force of law recalled by the VIA decree.

3.2.1 Fence Line

The following are the limits imposed by the articles 2, 3 and 8 of the applicable DPCM 14/11/1997, assuming, as a conservative approach, the territorial areas bordering on the CCPP subjected to normal, and not occasional, use by people and community both during day-time and night-time (refer to *Ministero dell'Ambiente* advice no. 588/2001/SIAR dated February 28th, 2001). The following limits apply since no tonal or impulsive components were found on all the monitored locations as a consequence of the CCPP operations.

3.2.1.1 North Fence

By the light of the acoustical classification actuated by the *Comune di Voghera*, the territorial area outside the CCPP property line on the North side, so at the boundary with the Smurfit Paper Mill, is classified under class VI - *Exclusively Industrial Areas*. For this class the *absolute immission limit value* of 70 dB(A) and the *emission limit value* of 65 dB(A) are applicable both during day-time and night-time.

3.2.1.2 East and South Fence

By the light of the acoustical classification actuated by the *Comune di Voghera*, the territorial areas outside the CCPP property line on the East and South sides, so at the boundary with country roads, are classified under class V - *Mainly Industrial Areas*. For this class the *absolute immission limit value* of 70 dB(A) and an *emission limit value* of 65 dB(A) are applicable during day-time. During night-time the absolute immission limit value is 60 dB(A) and the emission limit value is 55 dB(A).

3.2.1.3 West Fence

Assuming, as a conservative approach, a future acoustical classification of the *Silvano Pietra* territory surrounding the CCPP consistent with the one actuated by the *Comune di Voghera*, the limits of the class V - mentioned at point 3.2.1.2 above, apply. For the cultivated field at the boundary with the CCPP, the provisional rules of the DPCM 14/11/1997 actually require only for the compliance with the *absolute immission limit values* applicable to *All the National Territory*, so reflecting the ones applicable to class V but without considering the *emission limit values*.

3.2.2 Farmsteads

The following are the limits imposed by the articles 2, 3, 4 and 8 of the applicable DPCM 14/11/1997. The following limits apply since no tonal or impulsive components were found on all the monitored locations as a consequence of the CCPP operations.

3.2.2.1 On the Outside of *Cascina Panperduto*

Making the same conservative assumption mentioned at point 3.2.1.3 above, the limits of the class III – *Mixed Areas*, apply. For this class the *absolute immission limit value* of 60 dB(A) is applicable during day-time and 50 dB(A) during night-time.

3.2.2.2 On the Outside of *Cascine del Conte*

By the light of the acoustical classification actuated by the *Comune di Voghera*, the limits of the class III – Mixed Areas, mentioned at point 3.2.2.1 above, apply.

3.2.2.3 On the Outside of *Cascina La Rotta*

Assuming, as a conservative approach, a future acoustical classification of the *Casei Gerola* territory surrounding the CCPP consistent with the one actuated by the *Comune di Voghera*, the limits of the class III – Mixed Areas, mentioned at point 3.2.2.1 above, apply.

3.2.2.4 On the Inside of the Farmsteads

The maximum increase allowed to the environmental noise levels inside the farmsteads by the *differential immission limit values*, as a consequence of the CCPP operation, is 5 dB(A) during day-time and 3dB(A) during night-time, if the actual environmental noise levels inside the *inhabited place* with the open windows exceed 50 dB(A) during day-time and 40 dB(A) during night-time.

3.2.3 Summary

The following table summarizes the environmental limits applied to the whole plant having assumed, as a conservative approach, the territorial areas bordering on the CCPP subjected to normal, and not occasional, use by people and community and a future acoustical classification of the *Silvano Pietra* and *Casei Gerola* territories surrounding the CCPP consistent with the one actuated by the *Comune di Voghera*.

Limit	**A** ***C.na Panperduto***		**B** **North Fence**		**C** **East Fence**		**D** ***C.ne del Conte***		**E** **South Fence**		**F** **West Fence**		**G** ***C.na La Rotta***	
	day	night	day	night	day	night	day	night	day	night	day	night	day	night
absolute immission limit value	60	50	70	70	70	60	60	50	70	60	70	60	60	50
emission limit value	-	-	65	65	65	55	-	-	65	55	65	55	-	-
differential immission limit value (when applicable)	5	3	-	-	-	-	5	3	-	-	-	-	5	3

4.0 CONCLUSIONS

4.1 Single Machine

The averaged A-weighted broad band sound pressure levels immitted by each equipment continuously emitting noise and supplied by Foster Wheeler Italiana comply with the limit of 85 dB(A) at 1 m. No appeal to the allowable 3 dB(A) margin mentioned at the article 4.1.c of the Annex 1 of the Contract is needed. Seen the margins with the allowable limit, no corrections to subtract reflection effects, as well as to subtract the contribution of other equipment emitting noise close to the one under testing, are needed.

4.2 Whole Plant

4.2.1 Day-time Environmental Noise Levels

4.2.1.1 Location "A" / *C.na Panperduto*

The *absolute immission limit value* of 60 dB(A) applicable to the class III is not exceeded by the recorded level of 43.2 dB(A). The *differential immission limit value* is therefore not applicable, since the actual day-time environmental noise level inside the *inhabited place* with the open windows does not exceed 50 dB(A) as a consequence of the CCPP steady operation.

4.2.1.2 Location "B" / CCPP North Fence

The *absolute immission limit value* of 70 dB(A) applicable to the class VI is not exceeded by the recorded level of 58.1 dB(A). The recorded level does not exceed moreover the *emission limit value* of 65 dB(A), attributing, as a conservative approach, to the CCPP only the generation of the recorded noise level.

4.2.1.3 Location "C" / CCPP East Fence

The *absolute immission limit value* of 70 dB(A) applicable to the class V is not exceeded by the recorded level of 56.4 dB(A). The recorded level does not exceed moreover the *emission limit value* of 65 dB(A), attributing, as a conservative approach, to the CCPP only the generation of the recorded noise level.

4.2.1.4 Location "D" / *C.ne del Conte*

The *absolute immission limit value* of 60 dB(A) applicable to the class III is not exceeded by the recorded level of 44.0 dB(A). The *differential immission limit value* is therefore not applicable, since the actual day-time environmental noise level inside the *inhabited place* with the open windows does not exceed 50 dB(A) as a consequence of the CCPP steady operation.

4.2.1.5 Location "E" / CCPP South Fence

The *absolute immission limit value* of 70 dB(A) applicable to the class V is not exceeded by the recorded level of 46.1 dB(A). The recorded level does not exceed moreover the *emission limit value* of 65 dB(A), attributing, as a conservative approach, to the CCPP only the generation of the recorded noise level.

4.2.1.6 Location "F" / CCPP West Fence

The *absolute immission limit value* of 70 dB(A) applicable to the class V is not exceeded by the recorded level of 53.0 dB(A). The recorded level does not exceed moreover the *emission limit value* of 65 dB(A), attributing, as a conservative approach, to the CCPP only the generation of the recorded noise level.

4.2.1.7 Location "G" / *C.na La Rotta*

The absolute immission limit value of 60 dB(A) applicable to the class III is not exceeded by the recorded level of 33.4 dB(A). The *differential immission limit value* is therefore not applicable, since the actual day-time environmental noise level inside the *inhabited place* with the open windows does not exceed 50 dB(A) as a consequence of the CCPP steady operation.

4.2.1.8 All Locations

No appeal to the allowable 3 dB(A) margin mentioned at the article 4.1.c of the Contract is needed.

4.2.2 Night-time Environmental Noise Levels

4.2.2.1 Location "A" / *C.na Panperduto*

The *absolute immission limit value* of 50 dB(A) applicable to the class III is not exceeded by the recorded level of 48.1 dB(A). Seen the level recorded during day-time (43.2 dB(A) when the Smurfit WWT was less contributive than during the night-time measures), the *differential immission limit value* does not apply, since the actual night-time environmental noise level inside the *inhabited place* with the open windows is reasonably expected to not exceed 40 dB(A) as a consequence of the CCPP steady operation. According to the Torino ARPA experience on the matter (refer to http://www.provincia.torino.it/ambiente/agenda21/forum/index), the actual night-time environmental noise level inside the *inhabited place* with the open windows is in fact 5 dB at least lower than the level recorded outdoors (43.2 - 5 = 38.2 < 40 dB(A)).

4.2.2.2 Location "B" / CCPP North Fence

The *absolute immission limit value* of 70 dB(A) applicable to the class VI is not exceeded by the recorded level of 56.2 dB(A). The recorded level does not exceed moreover the *emission limit value* of 65 dB(A), attributing, as a conservative approach, to the CCPP only the generation of the recorded noise level.

4.2.2.3 Location "C" / CCPP East Fence

The *absolute immission limit value* of 60 dB(A) applicable to the class V is not exceeded by the recorded level of 51.9 dB(A). The recorded level does not exceed moreover the *emission limit value* of 55 dB(A), attributing, as a conservative approach, to the CCPP only the generation of the recorded noise level.

4.2.2.4 Location "D" / *C.ne del Conte*

The *absolute immission limit value* of 50 dB(A) applicable to the class III is not exceeded by the recorded level of 42.9 dB(A). After having masked the recorded noise levels by the intermittent contribution of the dogs barking close to the farm (L_{AFMin} 38.2 dB(A), L_{AF90} 39.6 dB(A) – refer to para. 2.5 of the Attachment III), the *differential immission limit value* does not apply, since the actual night-time environmental noise level inside the *inhabited place* with the open windows is reasonably expected to not exceed 40 dB(A) as a consequence of the CCPP steady operation. Making reference to the above mentioned Torino ARPA experience on the matter, the actual night-time environmental noise level inside the *inhabited place* with the open windows is further below 40 dB(A).

4.2.2.5 Location "E" / CCPP South Fence

The *absolute immission limit value* of 60 dB(A) applicable to the class V is not exceeded by the recorded level of 46.8 dB(A). The recorded level does not exceed moreover the *emission limit*

value of 55 dB(A), attributing, as a conservative approach, to the CCPP only the generation of the recorded noise level.

4.2.2.6 Location "F" / CCPP West Fence

The *absolute immission limit value* of 60 dB(A) applicable to the class V is not exceeded by the recorded level of 53.0 dB(A). The recorded level does not exceed moreover the *emission limit value* of 55 dB(A), attributing, as a conservative approach, to the CCPP only the generation of the recorded noise level.

4.2.2.7 Location "G" / *C.na La Rotta*

The *absolute immission limit value* of 50 dB(A) applicable to the class III is not exceeded by the recorded level of 44.8 dB(A). Seen the level recorded during day-time (33.4 dB(A) when the Smurfit WWT was less contributive than during the nigth-time measures), the *differential immission limit value* does not apply, since the actual night-time environmental noise level inside the *inhabited place* with the open windows is reasonably expected to not exceed 40 dB(A) as a consequence of the CCPP steady operation. Making reference to the above mentioned Torino ARPA experience on the matter, the actual night-time environmental noise level inside the *inhabited place* with the open windows is further below 40 dB(A).

4.2.2.8 All Locations

No appeal to the allowable 3 dB(A) margin mentioned at the article 4.1.c of the Contract is needed.

4.3 Conclusions

The noise level immitted by each equipment continuously emitting noise and supplied by Foster Wheeler Italiana comply with the applicable contractual limit. The whole plant running at base load satisfies all the applicable contractual limits.

ATTACHMENT I

EQUIPMENT NOISE LEVEL ASSESSMENT

1.0 TEST PROCEDURE

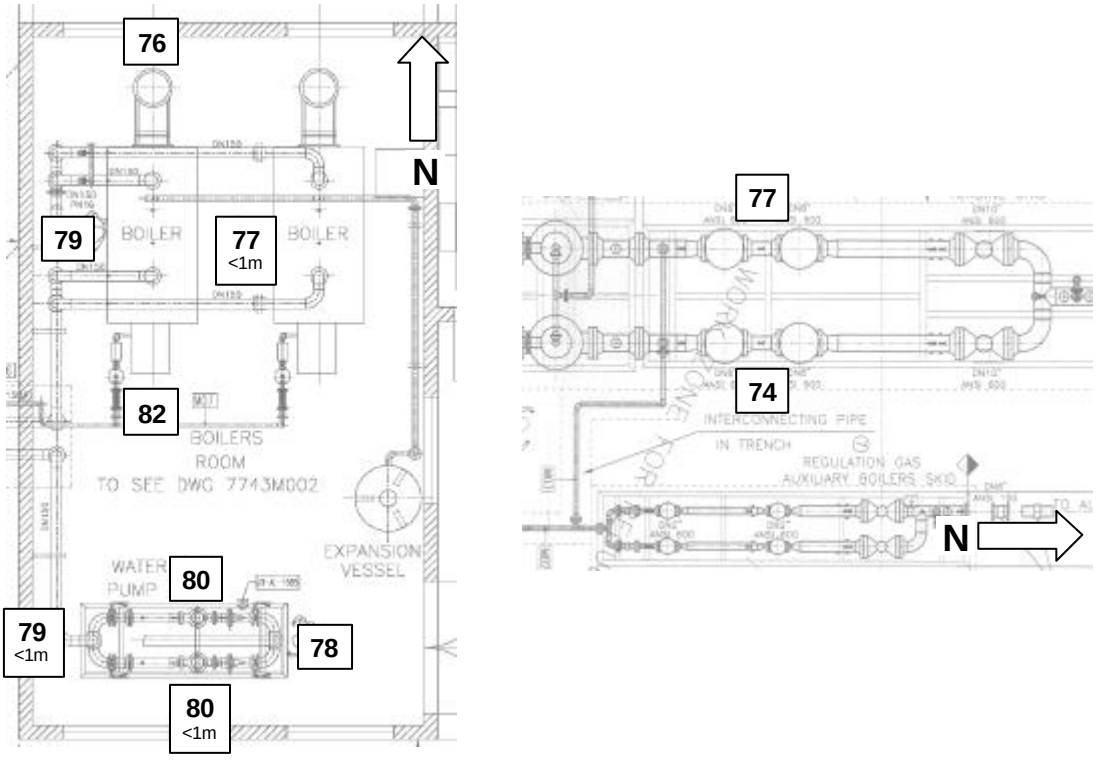
The measures were performed in accordance with the Sound Test Procedure, Appendix C of the Performance Test Procedure. Information on the utilized sound level meter are reported under the Attachment IV.

Each equipment of the CCPP continuously emitting noise and supplied by Foster Wheeler Italiana have been tested. The measures were executed in the morning of May 6th, 2005 by Foster Wheeler Italiana (Mr. Gorletta, Mr. Previati) always in presence of Vincotte (Mr. Boulanger) and, for PK-1501 only, in presence also of Tractebel Energy Engineering (Mr. Vervaeke). The diagram of the CCPP load, giving evidence that during the performed measures the base load condition was achieved, is reported under the Attachment V.

The following para. 2.0 report the equivalent continuous sound pressure levels, broad-band with "A" frequency weighting, recorded during the measures. By mutual agreement with Vincotte (Mr. Boulanger), the integration time has been 10 seconds for all the executed measures.

2.0 RESULTS

2.1 PK-1501 - NATURAL GAS METERING & REDUCTION STATION



Notes:

- Measures were located at 1m from each equipment, unless otherwise indicated, at approximately 1.5m elevation from the ground.
- During the measures, unless otherwise indicated, all the equipment of the package were operating, in particular: one boiler of two (the tested one on the W side) and the water pump on the S side.
- The reduction valves to the Auxiliary Boiler were not running.
- The sound pressure level values are rounded to the nearest whole number.

Conclusions:

- Equipment located outside the building:

  L_{AEQ} (AVERAGE): **76dB(A)**

  REVERBERANT FIELD: **NEGLIGIBLE**

  BACKGROUND NOISE: **MODERATE**

- Equipment located inside the building:

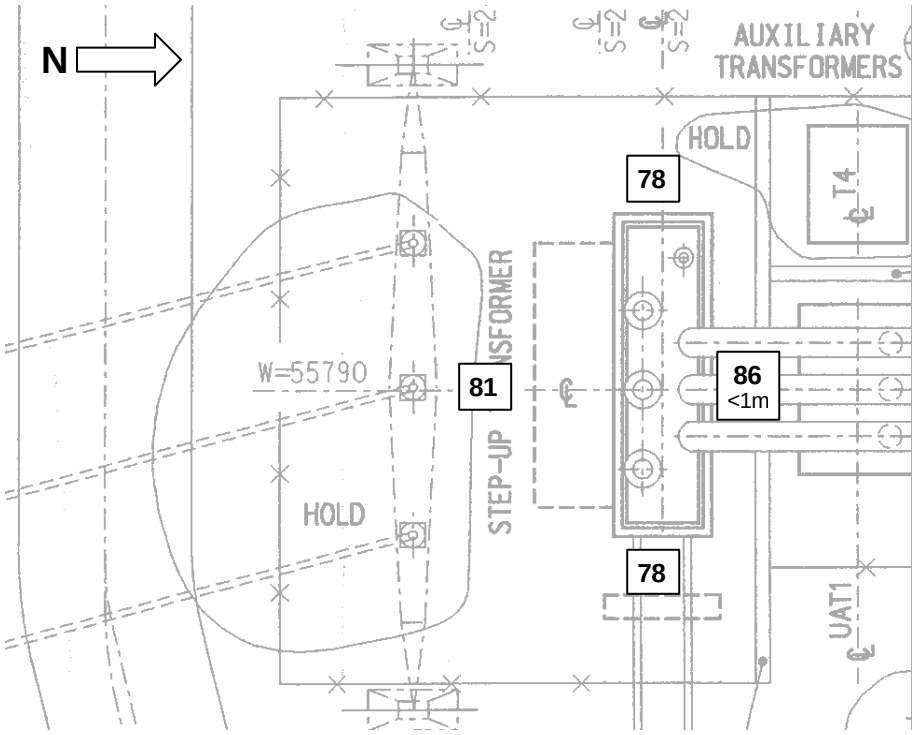
  BOILER - L_{AEQ} (AVERAGE): **79dB(A)**

  WATER PUMP - L_{AEQ} (AVERAGE): **79dB(A)**

  REVERBERANT FIELD: **INTENSE**

  BACKGROUND NOISE: **MODERATE**

2.2 UT1 - 2 WINDINGS UNIT TRANSFORMER



Notes:

- Measures were located at 1m from the equipment, unless otherwise indicated, at approximately 1.5m elevation from the ground.
- During the measures, eight of ten cooling fans of the package were operating (the fans not running were the ones on the W side).
- The sound pressure level values are rounded to the nearest whole number.

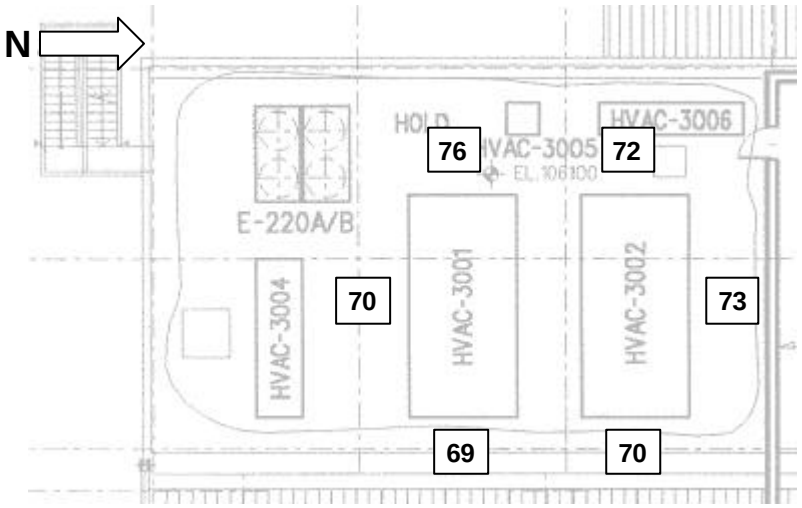
Conclusions:

L_{AEQ} (AVERAGE): **82dB(A)**

REVERBERANT FIELD: **NEGLIGIBLE (INTENSE FOR THE MEASURE ON THE N-SIDE)**

BACKGROUND NOISE: **MODERATE**

2.3 HVAC-3001/3002 - HEATING, VENTILATION AND AIR CONDITIONING TECHNICAL BUILDING



Notes:

- Measures were located at 1m from each equipment at approximately 1.5m elevation from the roof of the building below.
- The sound pressure level values are rounded to the nearest whole number.

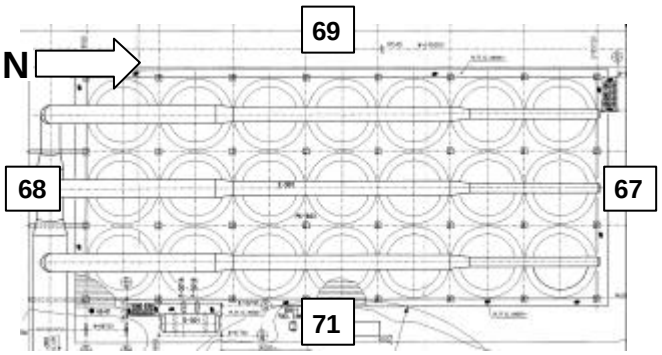
Conclusions:

L_{AEQ} (AVERAGE): **72dB(A)**

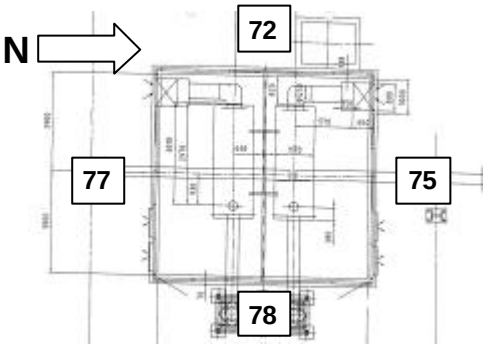
REVERBERANT FIELD: **NEGLIGIBLE**

BACKGROUND NOISE: **MODERATE**

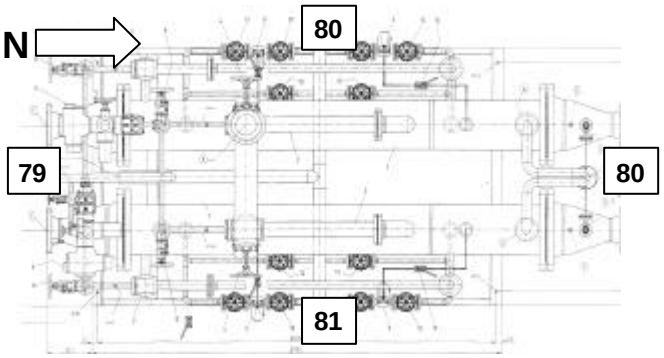
2.4 PK-303 - AIR CONDENSER PACKAGE



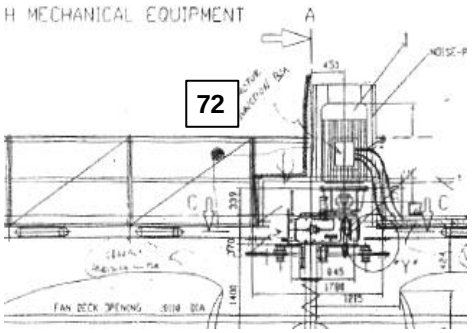
PK-303 Package



Condensate pumps enclosure



Vacuum skid



Single Fan & e-motor

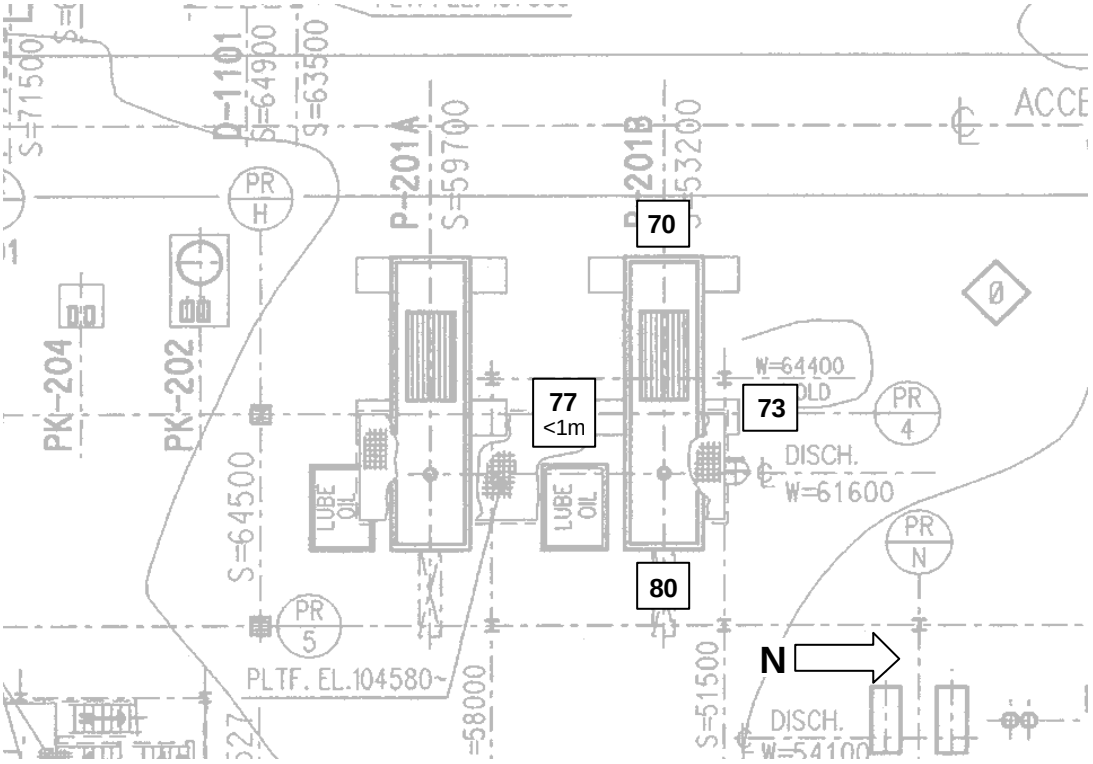
Notes:

- Measures were located at 1m from each equipment at approximately 1.5m elevation from the ground (for measures around the PK-303 package and condensate pumps enclosure) or from the platform at elevation (for measures around vacuum skid and fan unit).
- During all the measures, all the twenty-one fans units of the package were on operation.
- The sound pressure level values are rounded to the nearest whole number.

Conclusions:

- Air Cooled Condenser package:
  - L_{AEQ} (AVERAGE): **69dB(A)**
  - REVERBERANT FIELD: **NEGLIGIBLE**
  - BACKGROUND NOISE: **NEGLIGIBLE**
- Condensate pumps enclosure:
  - L_{AEQ} (AVERAGE): **76dB(A)**
  - REVERBERANT FIELD: **NEGLIGIBLE**
  - BACKGROUND NOISE: **MODERATE**
- Vacuum skid:
  - L_{AEQ} (AVERAGE): **80dB(A)**
  - REVERBERANT FIELD: **NEGLIGIBLE**
  - BACKGROUND NOISE: **MODERATE**
- Fan unit:
  - L_{AEQ} (AVERAGE): **72dB(A)**
  - REVERBERANT FIELD: **MODERATE**
  - BACKGROUND NOISE: **NEGLIGIBLE**

2.5 P-201A/B - BOILER FEED WATER PUMPS



Notes:

- Measures were located at 1m from the pump enclosure, unless otherwise indicated, at approximately 1.5m elevation from the ground.
- P-201B was operating with a drainage of water on the E side making noise, P-201A was shut-off.
- The sound pressure level values are rounded to the nearest whole number.

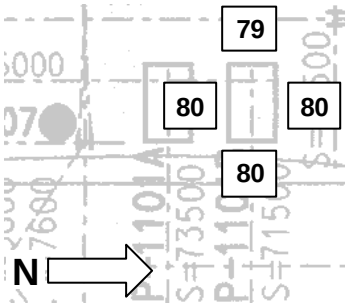
Conclusions:

L_{AEQ} (AVERAGE): **77dB(A)**

REVERBERANT FIELD: **NEGLIGIBLE**

BACKGROUND NOISE: **MODERATE**

2.6 P-1101A/B - MACHINERY COOLING WATER PUMPS



Notes:

- Measures were located at 1m from the equipment at approximately 1.5m elevation from the ground.
- P-1101B was operating, P-1101A was shut-off.
- The sound pressure level values are rounded to the nearest whole number.

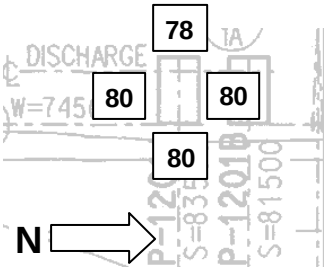
Conclusions:

L_{AEQ} (AVERAGE): **80dB(A)**

REVERBERANT FIELD: **NEGLIGIBLE**

BACKGROUND NOISE: **INTENSE**

2.7 P-1201A/B - DEMINERALIZATION WATER MAKE-UP PUMPS



Notes:

- Measures were located at 1m from the equipment at approximately 1.5m elevation from the ground.
- P-1201A was operating, P-1201B was shut-off.
- The sound pressure level values are rounded to the nearest whole number.

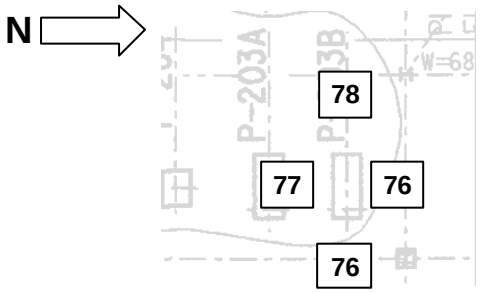
Conclusions:

L_{AEQ} (AVERAGE): **80dB(A)**

REVERBERANT FIELD: **NEGLIGIBLE**

BACKGROUND NOISE: **INTENSE**

2.8 P-203A/B - RECIRCULATION PUMPS



Notes:

- Measures were located at 1m from the equipment at approximately 1.5m elevation from the ground.
- P-203B was operating, P-203A was shut-off.
- The sound pressure level values are rounded to the nearest whole number.

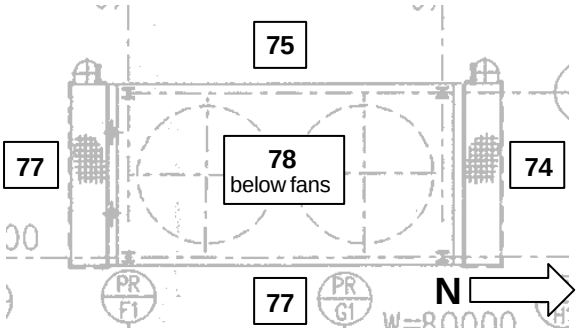
Conclusions:

L_{AEQ} (AVERAGE): **77dB(A)**

REVERBERANT FIELD: **NEGLIGIBLE**

BACKGROUND NOISE: **INTENSE**

2.9 E-1101 - MACHINERY COOLING WATER EXCHANGER



Notes:

- Measures were located at 1m from the equipment, unless otherwise indicated, at approximately 1.5m elevation from the ground.
- Both the fans were in operation.
- The sound pressure level values are rounded to the nearest whole number.

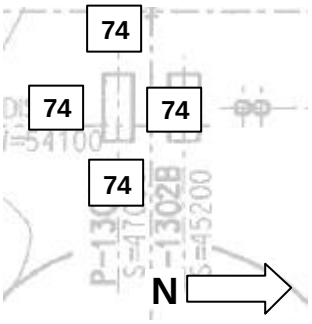
Conclusions:

L_{AEQ} (AVERAGE): **76dB(A)**

REVERBERANT FIELD: **NEGLIGIBLE**

BACKGROUND NOISE: **INTENSE**

2.10 P-1302A/B - SERVICE WATER PUMPS



Notes:

- Measures were located at 1m from the equipment at approximately 1.5m elevation from the ground.
- P-1302A was operating, P-1302B was shut-off.
- The sound pressure level values are rounded to the nearest whole number.

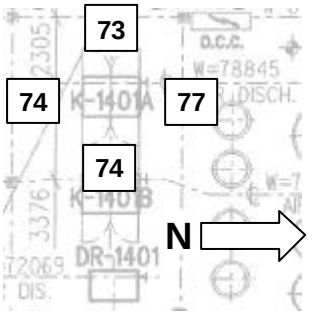
Conclusions:

L_{AEQ} (AVERAGE): **74dB(A)**

REVERBERANT FIELD: **NEGLIGIBLE**

BACKGROUND NOISE: **INTENSE**

2.11 PK-1401 - COMPRESSED AIR PACKAGE



Notes:

- Measures were located at 1m from the air compressor at approximately 1.5m elevation from the ground.
- K-1401A was operating, K-1401B was shut-off.
- The sound pressure level values are rounded to the nearest whole number.

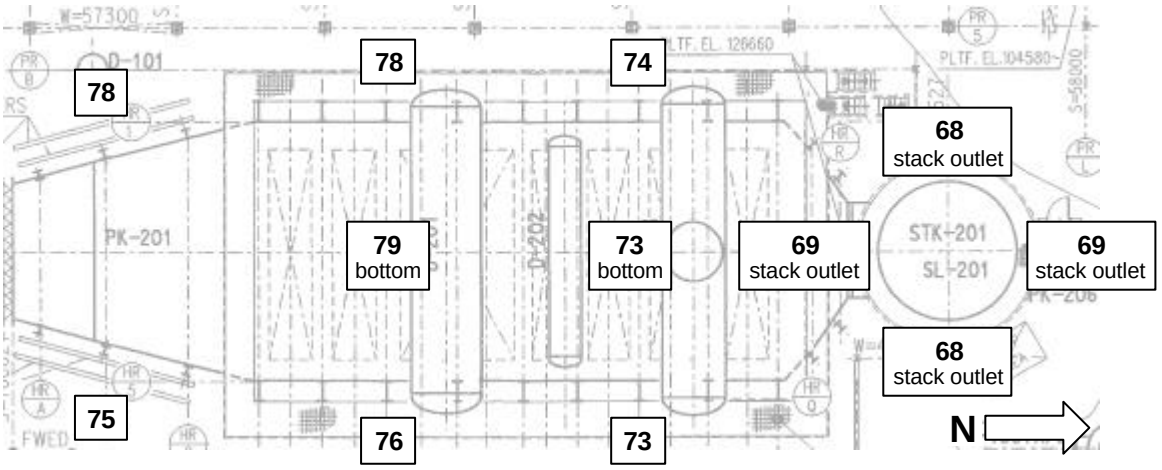
Conclusions:

L_{AEQ} (AVERAGE): **75dB(A)**

REVERBERANT FIELD: **INTENSE**

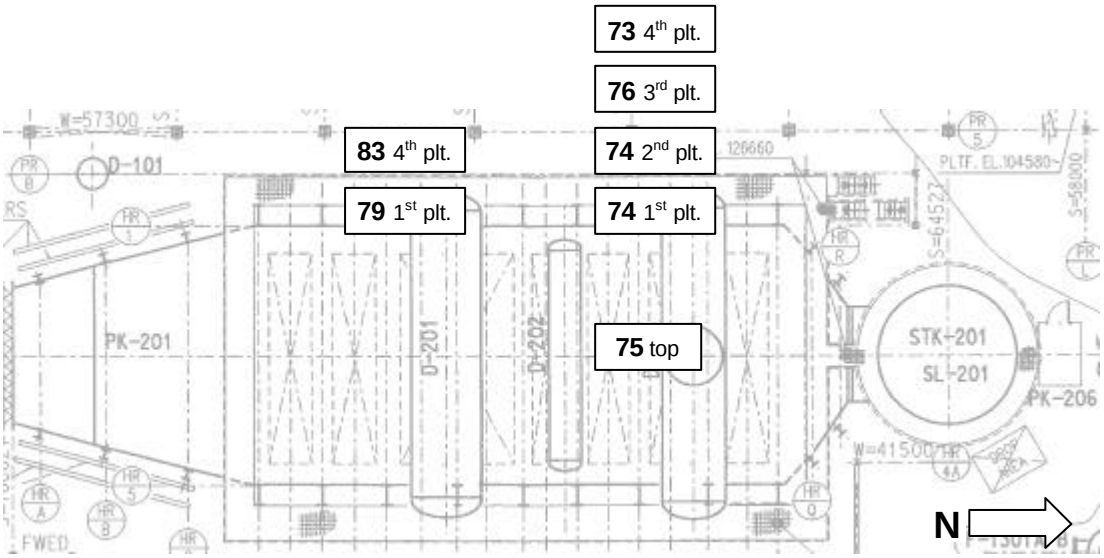
BACKGROUND NOISE: **NEGLIGIBLE**

2.12 PK-201 - HRSG PACKAGE



Notes:

- Measures were located at 1m from the HRSG, at approximately 1.5m elevation from the ground unless otherwise indicated.
- The sound pressure level values are rounded to the nearest whole number.



Notes:

- Measures were located at 1m from the HRSG wall on the W-side, unless otherwise indicated, at approximately 1.5m elevation from the platform in correspondence to the 3rd and 7th columns from N.
- The sound pressure level values are rounded to the nearest whole number.

Conclusion

- HRSG walls:

L_{AEQ} (AVERAGE): **77dB(A)**

REVERBERANT FIELD: **NEGL.**

BACKGROUND NOISE: **INTENSE**

- HRSG bottom/top:

L_{AEQ} (AVERAGE): **76dB(A)**

REVERBERANT FIELD: **MODER.**

BACKGROUND NOISE: **INTENSE**

- HRSG stack outlet:

L_{AEQ} (AVERAGE): **69dB(A)**

REVERBERANT FIELD: **NEGL.**

BACKGROUND NOISE: **NEGL.**

ATTACHMENT II

DAY-TIME ENVIRONMENTAL NOISE LEVEL ASSESSMENT

1.0 TEST PROCEDURE

The measures were performed in accordance with the Sound Test Procedure, Appendix C of the Performance Test Procedure. Information on the utilized sound level meter are reported under the Attachment IV.

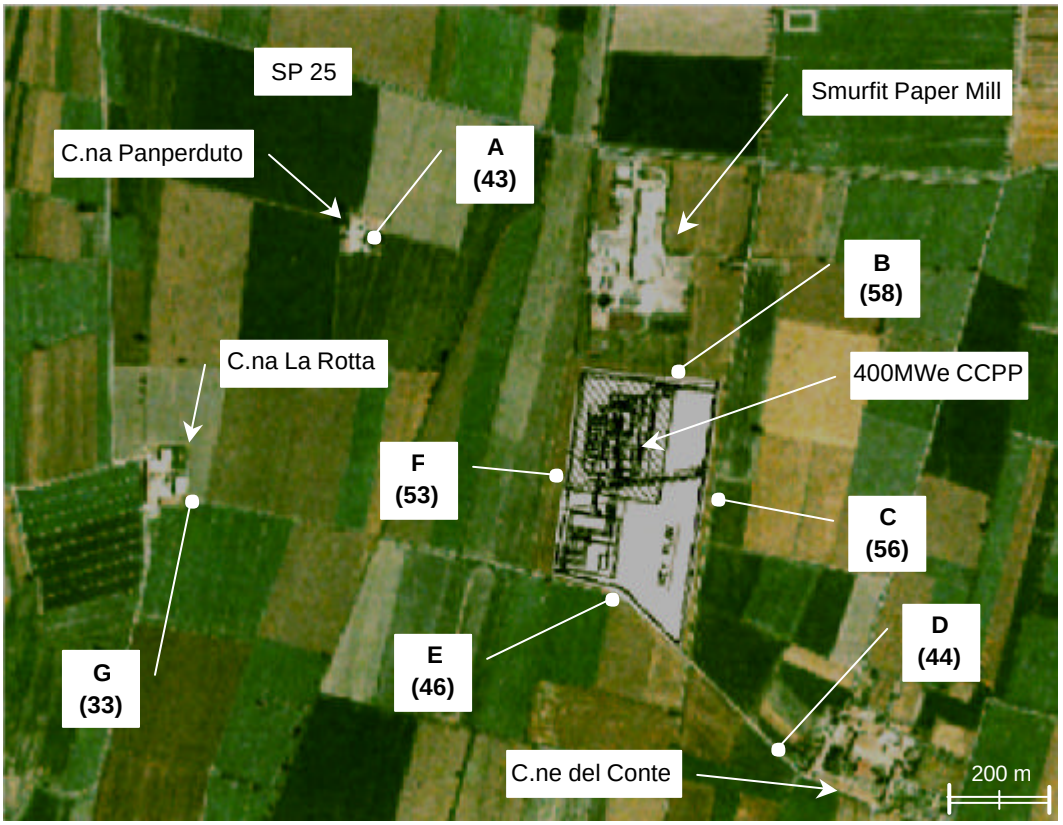
Statistical, frequency and time profile measurements were performed to characterize the acoustic field at the nearest community locations and at the CCPP fence line during day-time. The locations monitored in the previous surveys, when the CCPP was not already operating, have been tested. The measures were executed in the afternoon of May 6th, 2005 by Foster Wheeler Italiana (Mr. Gorletta, Mr. Previati) always in presence of Stone & Webster (Mr. Colin) and, except for points "C" and "D" only, in presence also of Tractebel Energy Engineering (Mr. Kolen). The diagram of the CCPP load, giving evidence that during the performed measures the base load condition was achieved, is reported under the Attachment V.

The doors of the machinery rooms were closed before of the sound test beginning, the control room operators were recommended to not open them during the test and the doors were checked to be closed after the execution of the test.

The following para. 2.0 report the various parameters recorded during the measures. By mutual agreement with Tractebel Energy Engineering (Mr. Vervaeke), the integration times have been 15 minutes for the measures at the community locations and 5 minutes for the measures at the CCPP fence line.

2.0 RESULTS

2.1 MEASUREMENTS POINTS LOCATIONS AND SUMMARY OF THE RESULTS



General Notes:

- Weather report:

  (average of 7 readings)

  Temperature: 27 °C
  Relative Humidity: < 30 %
  Moderate wind from S-W, clear sky, no precipitation

- Smurfit WWT machinery was heard to be on operation and no steam vents to atmosphere produced by the Paper Mill were noted during the measures

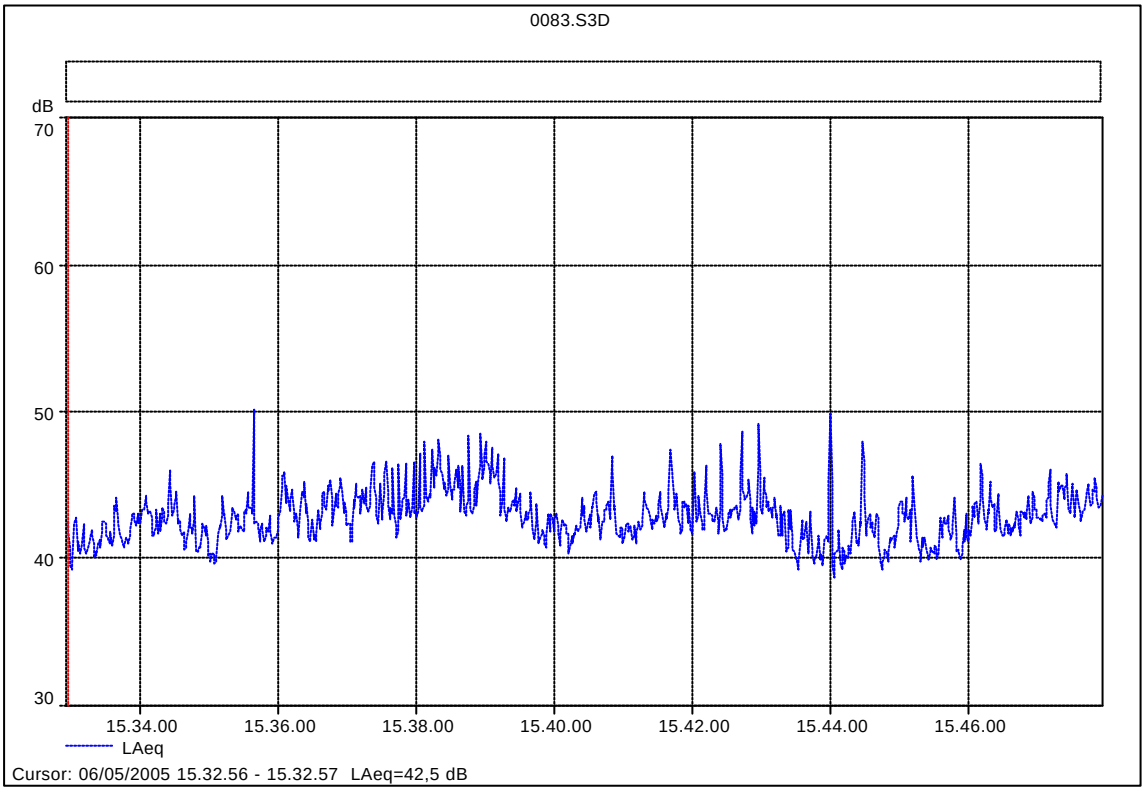
- No tonal or impulsive components were found on all the monitored locations as a consequence of the CCPP operations, according to the survey procedure prescribed by the DMA 16/03/1998, attachment B, points 9, 10 and 11, as evidenced by the diagrams of the 1/3 octave bands minimum spectral levels against the ISO 226 loudness level contours reported at the following points from 2.2 to 2.8

- With respect to the previous surveys, when the CCPP was not yet operating, the location “D” has been moved 30 m about towards the CCPP in order to minimize the risk of alarming the Cascine del Conte dogs to not record their barking

- The numbers in brackets report the detected equivalent continuous sound pressure levels (L_{Aeq}) rounded to the nearest whole number

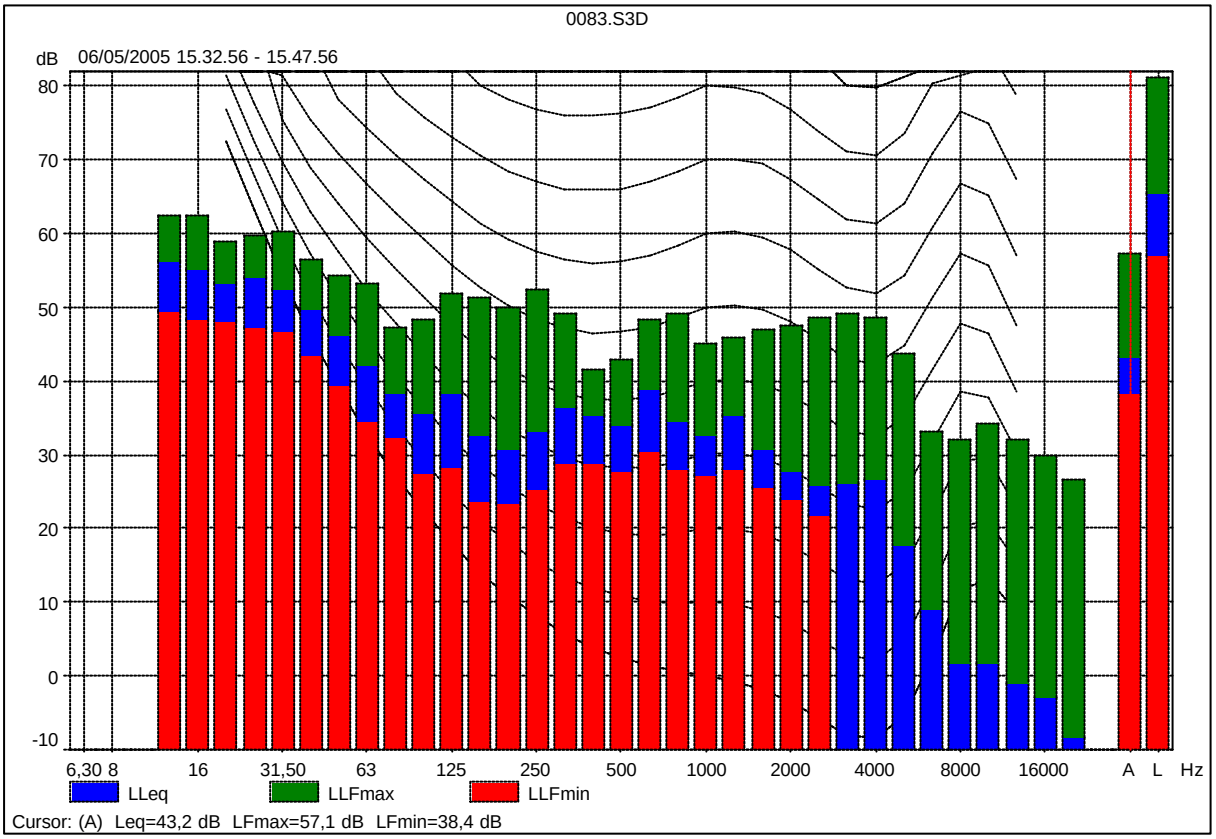
2.2 LOCATION "A" - C. NA PANPERDUTO

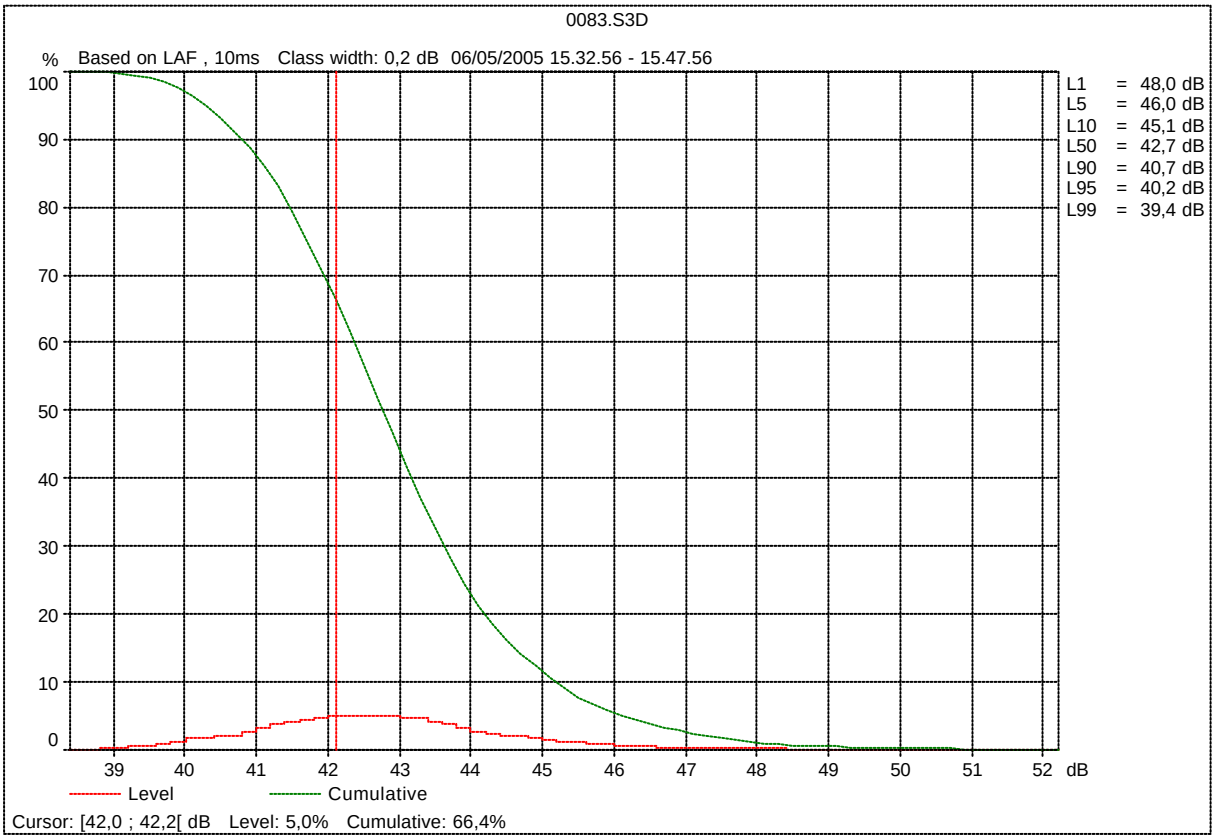
File no. 83	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**43,2**	38,4	57,1	86,2	0
Time	15.32.56	0.15.00						
Date	06/05/2005							



Notes:

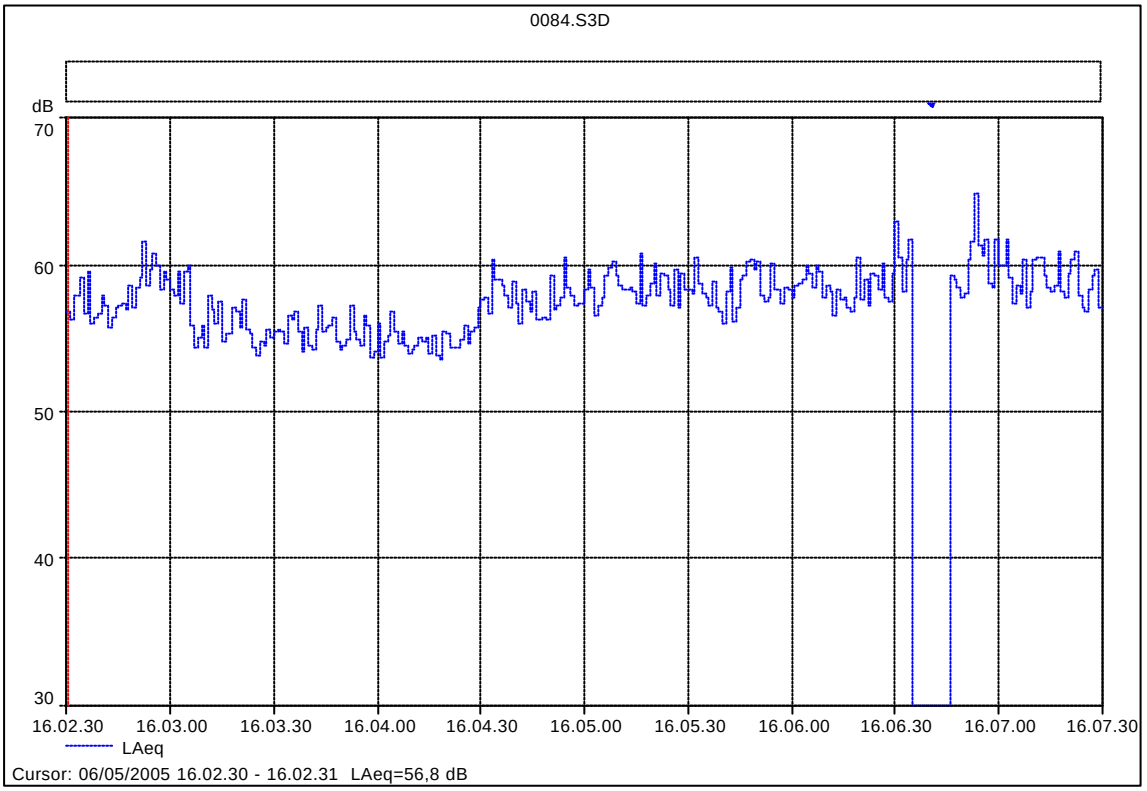
- Audible occasional cars passage on SP25
- Audible Smurfit WWT machinery operations
- Audible CCPP operations
- Audible birds singing
- Audible momentary car starting in the farm
- Aubible momentary cock singing in the farm


0083.S3D
dB 06/05/2005 15.32.56 - 15.47.56
80
70
60
50
40
30
20
10
0
-10
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=43,2 dB LFmax=57,1 dB LFmin=38,4 dB


0083.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 15.32.56 - 15.47.56
100
90
80
70
60
50
40
30
20
10
0
39
40
41
42
43
44
45
46
47
48
49
50
51
52 dB
L1 = 48,0 dB
L5 = 46,0 dB
L10 = 45,1 dB
L50 = 42,7 dB
L90 = 40,7 dB
L95 = 40,2 dB
L99 = 39,4 dB
Level
Cumulative
Cursor: [42,0 ; 42,2[dB Level: 5,0% Cumulative: 66,4%

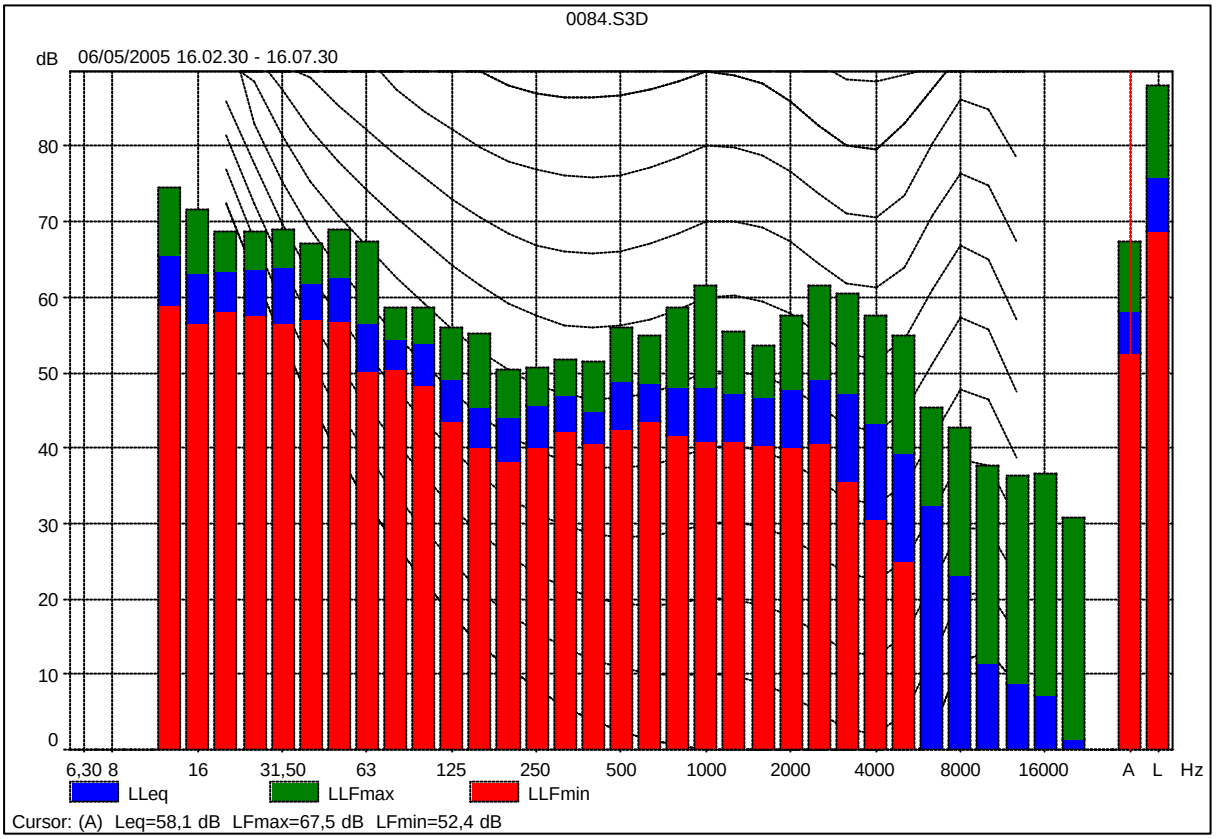
2.3 LOCATION "B" - FENCE LINE ON THE NORTH-SIDE

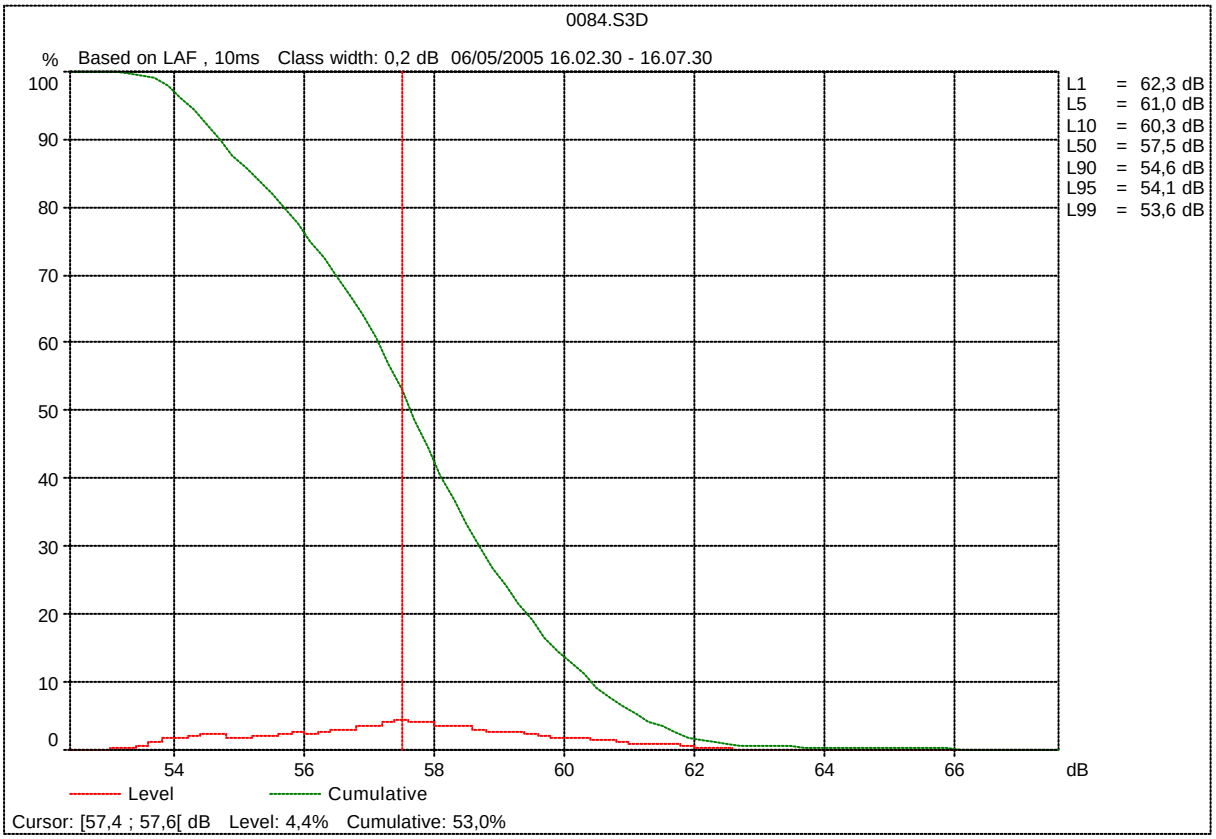
File no. 84	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**58,1**	52,4	67,5	94	0
Time	16.02.30	0.05.00						
Date	06/05/2005							



Notes:

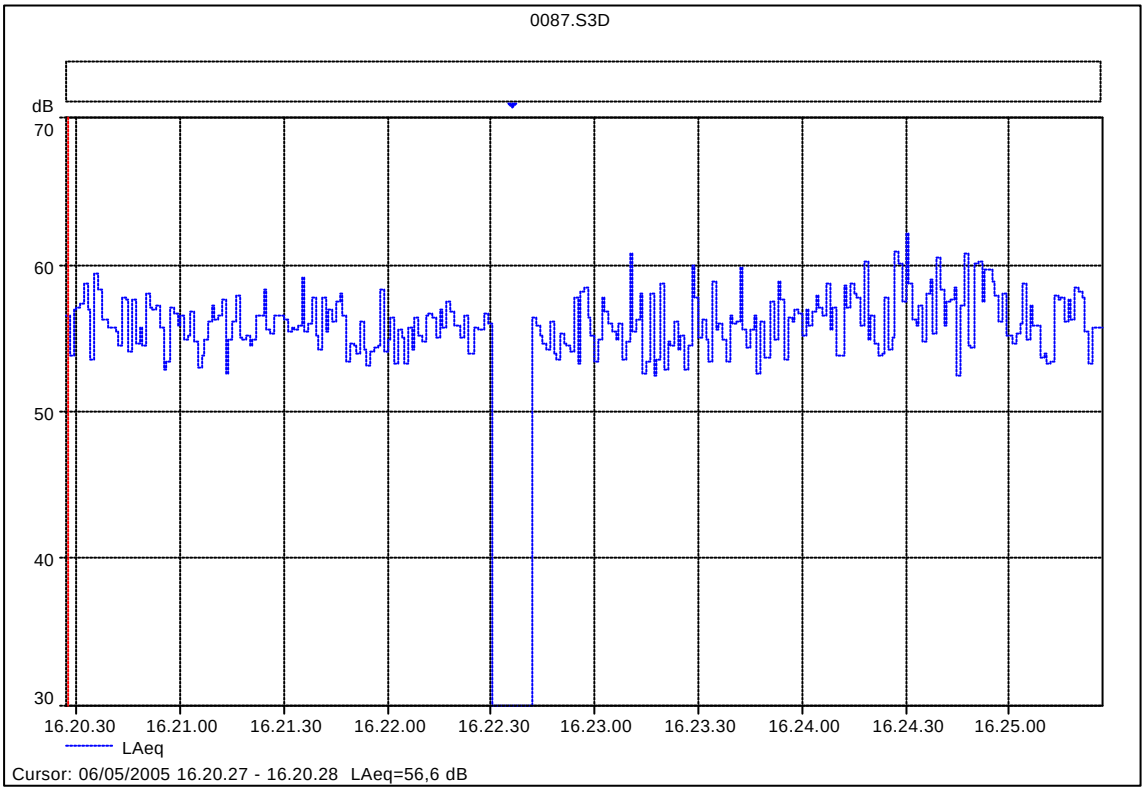
- Audible deaerator vent operations on the (CCPP) HRSG stack
- The integration was interrupted from 16.06.35 to 16.06.46 (hours.minutes.seconds) to not record a car parking close to the measurement location


0084.S3D
dB 06/05/2005 16.02.30 - 16.07.30
80
70
60
50
40
30
20
10
0
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=58,1 dB LFmax=67,5 dB LFmin=52,4 dB


0084.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 16.02.30 - 16.07.30
100
90
80
70
60
50
40
30
20
10
0
54
56
58
60
62
64
66
dB
L1 = 62,3 dB
L5 = 61,0 dB
L10 = 60,3 dB
L50 = 57,5 dB
L90 = 54,6 dB
L95 = 54,1 dB
L99 = 53,6 dB
Level
Cumulative
Cursor: [57,4 ; 57,6[dB Level: 4,4% Cumulative: 53,0%

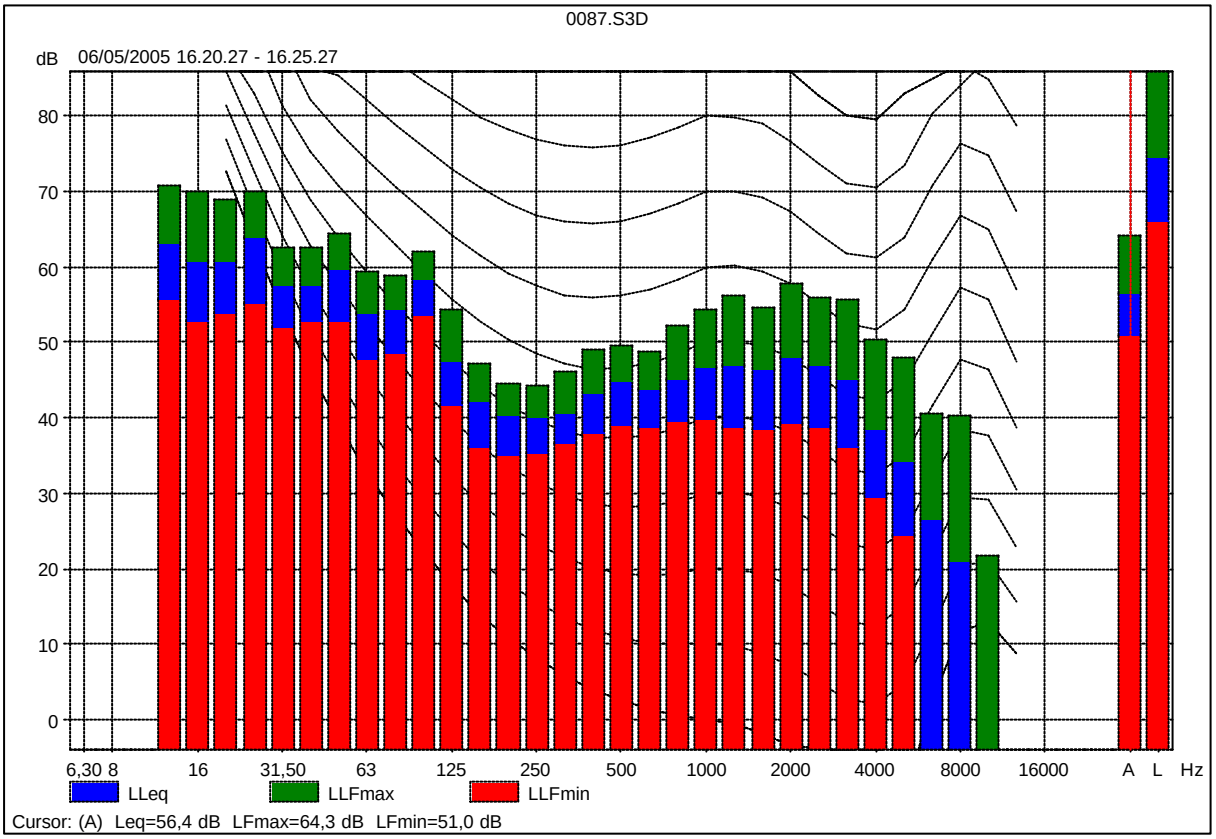
2.4 LOCATION "C" - FENCE LINE ON THE EASTH-SIDE

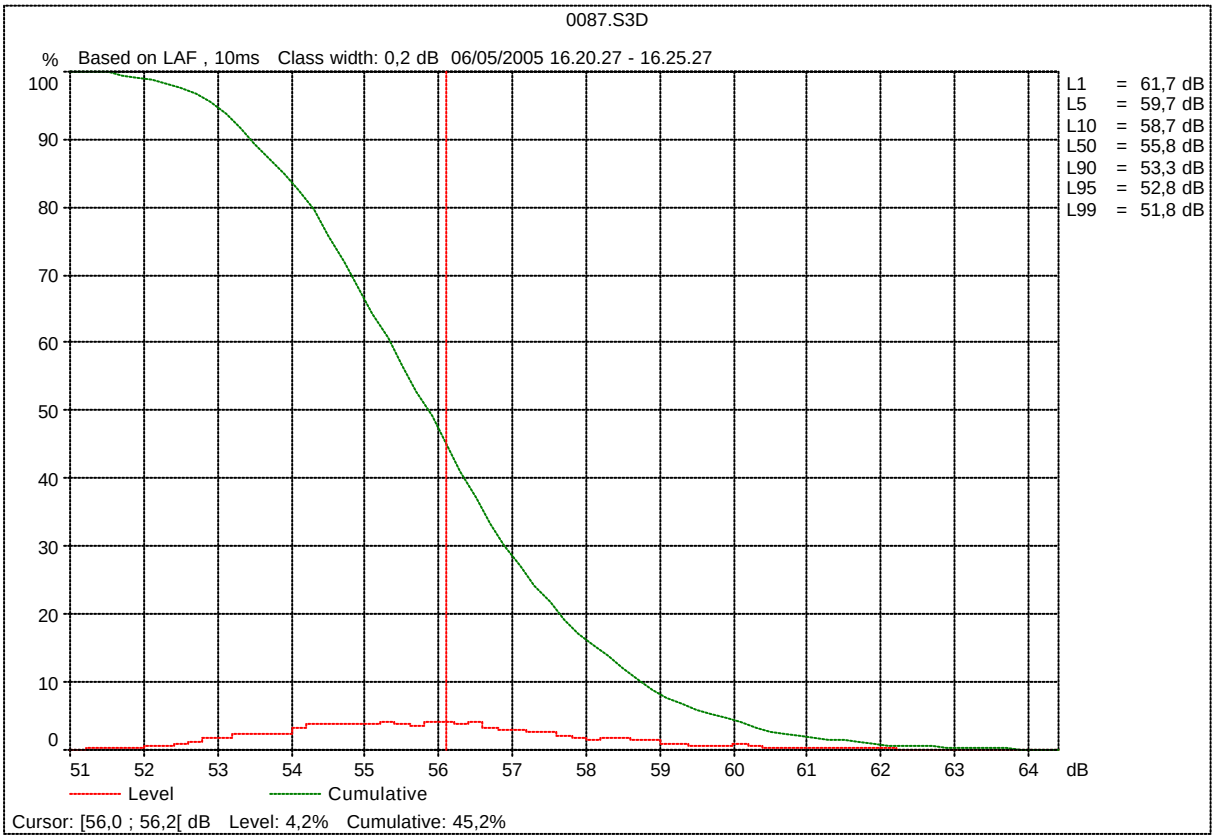
File no. 87	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**56,4**	51	64,3	92,2	0
Time	16.20.27	0.05.00						
Date	06/05/2005							



Notes:

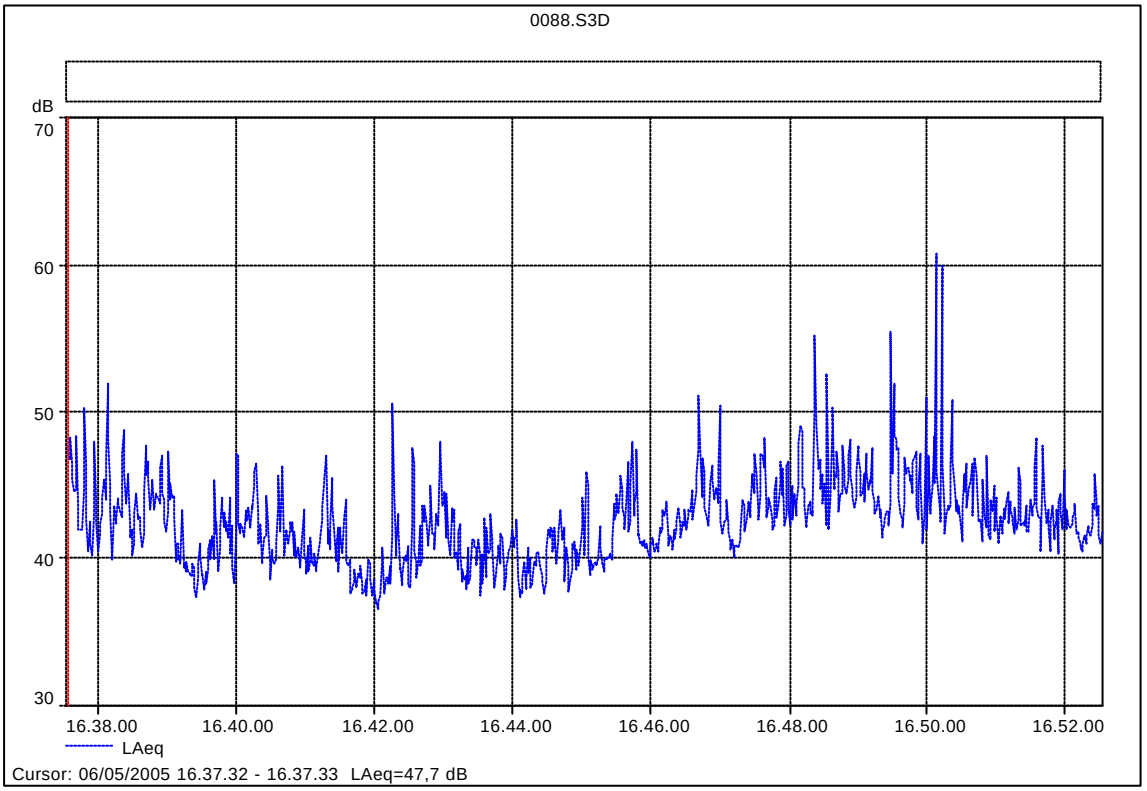
- Audible (CCPP) Gas Station operations
- Audible deaerator vent operations on the (CCPP) HRSG stack
- Audible birds singing
- The integration was interrupted from 16.22.29 to 16.22.42 (hours.minutes.seconds) to not record a car going out from the CCPP


0087.S3D
dB 06/05/2005 16.20.27 - 16.25.27
80
70
60
50
40
30
20
10
0
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=56,4 dB LFmax=64,3 dB LFmin=51,0 dB


0087.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 16.20.27 - 16.25.27
100
90
80
70
60
50
40
30
20
10
0
51
52
53
54
55
56
57
58
59
60
61
62
63
64
dB
L1 = 61,7 dB
L5 = 59,7 dB
L10 = 58,7 dB
L50 = 55,8 dB
L90 = 53,3 dB
L95 = 52,8 dB
L99 = 51,8 dB
Level
Cumulative
Cursor: [56,0 ; 56,2[dB Level: 4,2% Cumulative: 45,2%

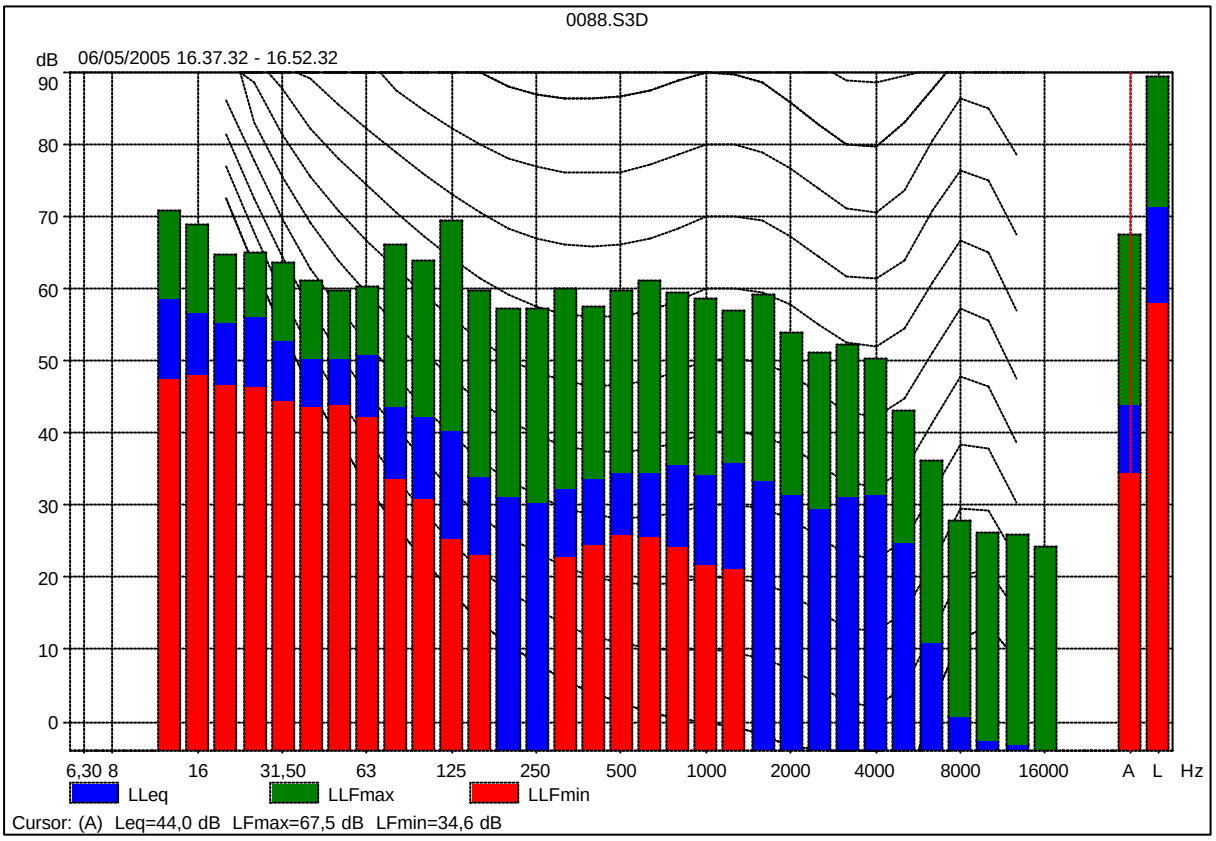
2.5 LOCATION "D" - C.NE DEL CONTE

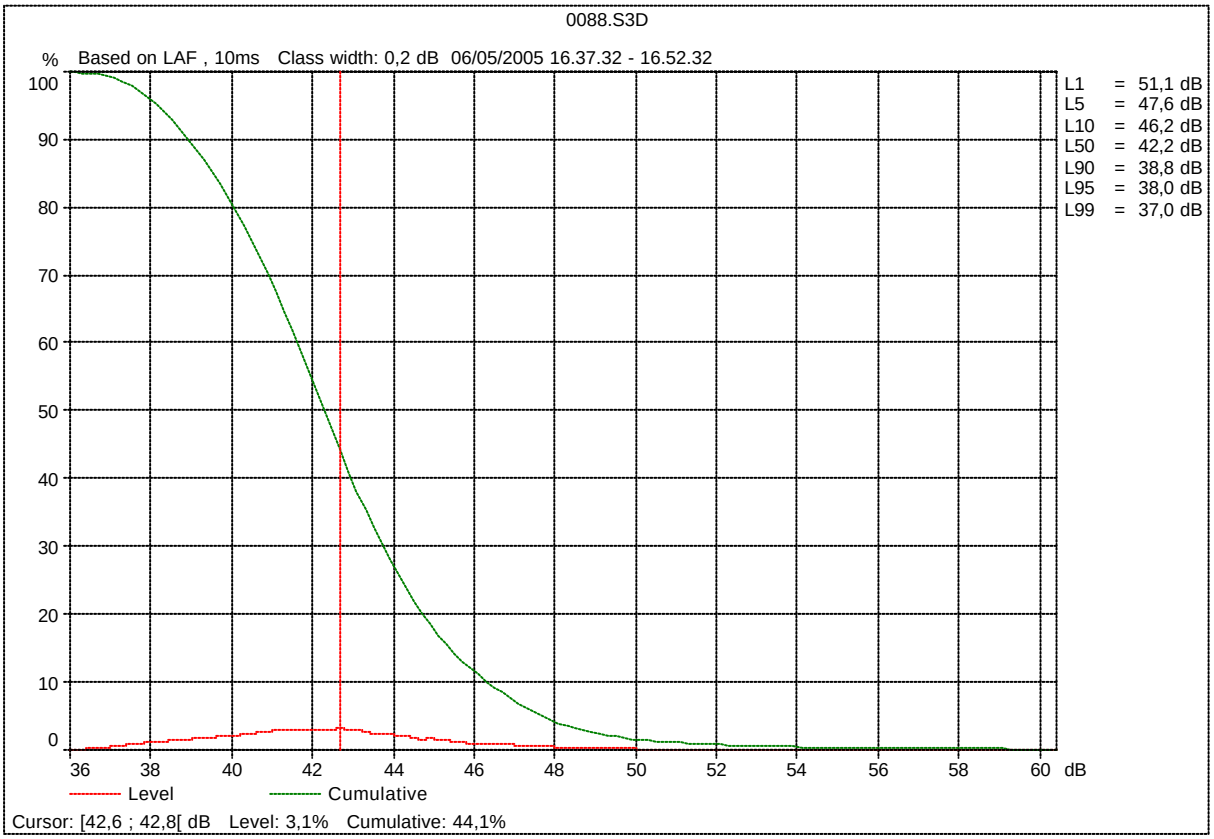
File no. 88	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**44**	34,6	67,5	96,1	0
Time	16.37.32	0.15.00						
Date	06/05/2005							



Notes:

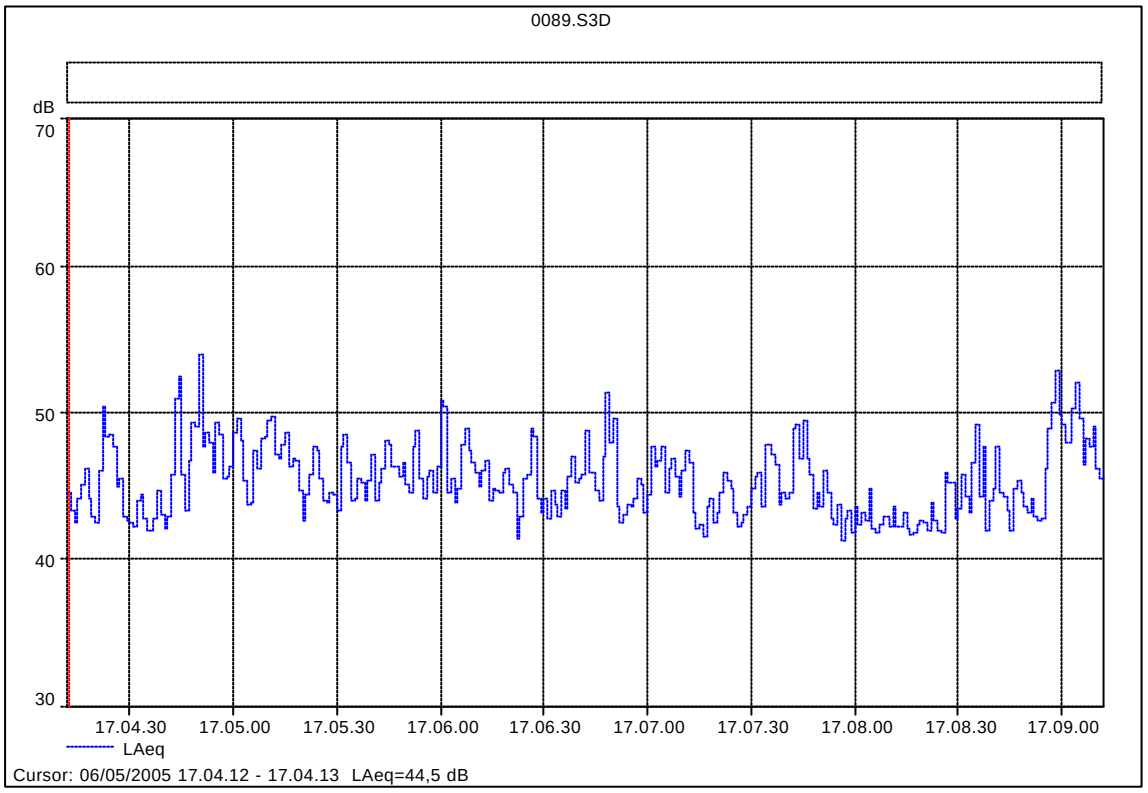
- Audible aeroplane far away
- Audible deaerator vent operations on the (CCPP) HRSG stack
- Audible birds singing
- Audible man loading steel into a lorry close to the farm


0088.S3D
dB 06/05/2005 16.37.32 - 16.52.32
90
80
70
60
50
40
30
20
10
0
6,30 8 16 31,50 63 125 250 500 1000 2000 4000 8000 16000 A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=44,0 dB LFmax=67,5 dB LFmin=34,6 dB


0088.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 16.37.32 - 16.52.32
100
90
80
70
60
50
40
30
20
10
0
36 38 40 42 44 46 48 50 52 54 56 58 60 dB
L1 = 51,1 dB
L5 = 47,6 dB
L10 = 46,2 dB
L50 = 42,2 dB
L90 = 38,8 dB
L95 = 38,0 dB
L99 = 37,0 dB
Level
Cumulative
Cursor: [42,6 ; 42,8[dB Level: 3,1% Cumulative: 44,1%

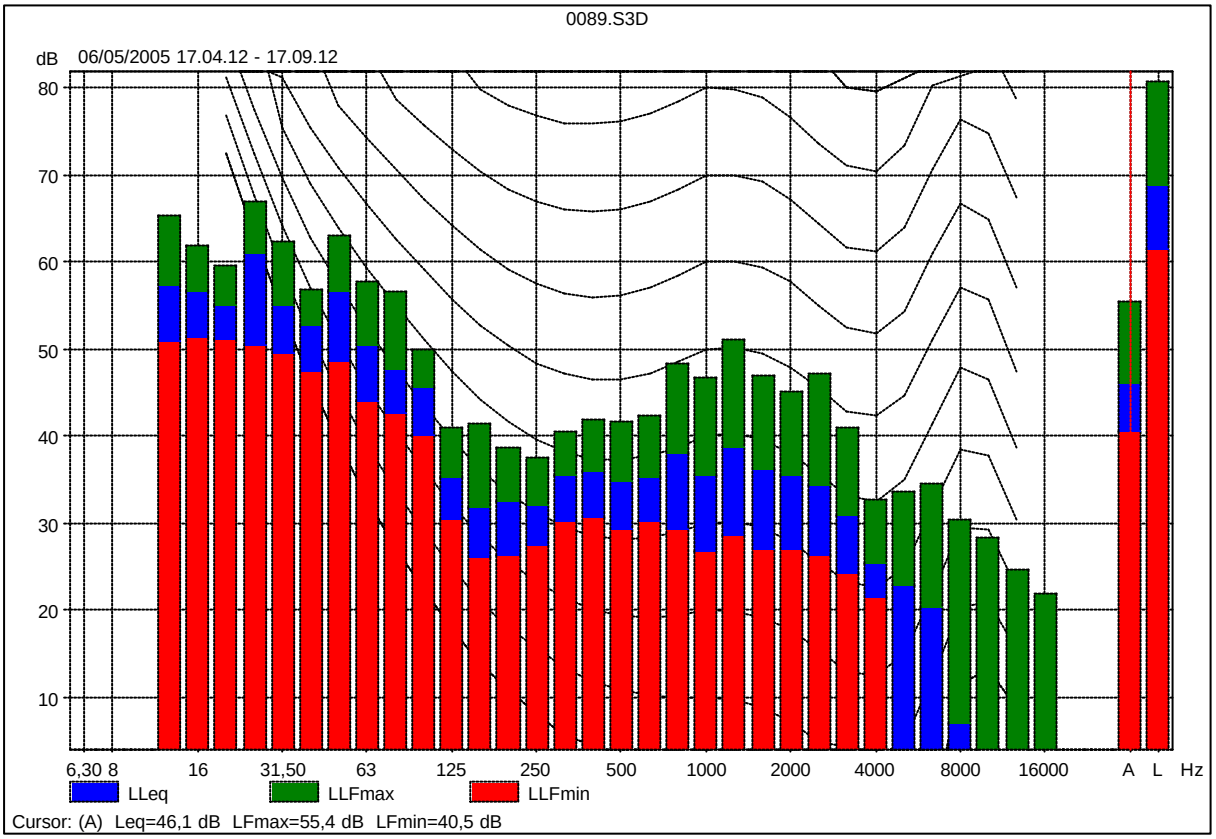
2.6 LOCATION "E" - FENCE LINE ON THE SOUTH-SIDE

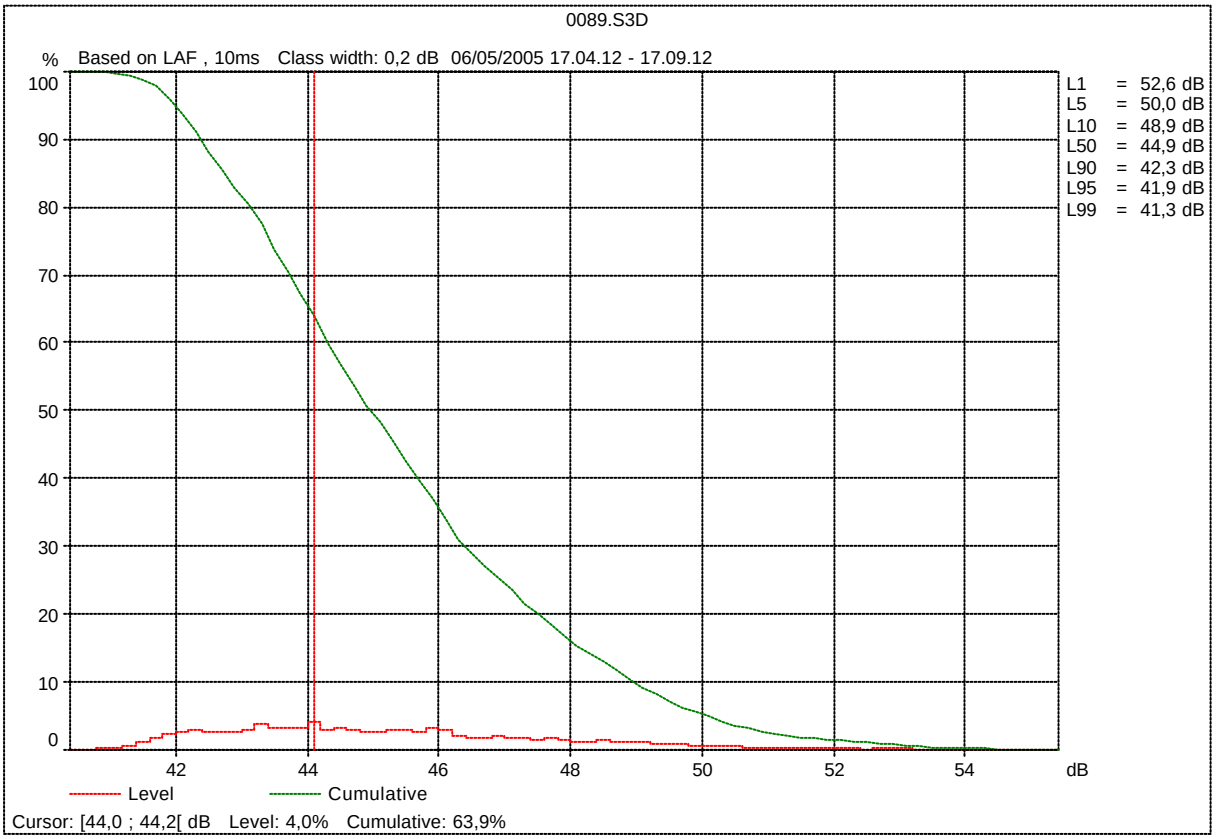
File no. 89	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**46,1**	40,5	55,4	86,1	0
Time	17.04.12	0.05.00						
Date	06/05/2005							



Notes:

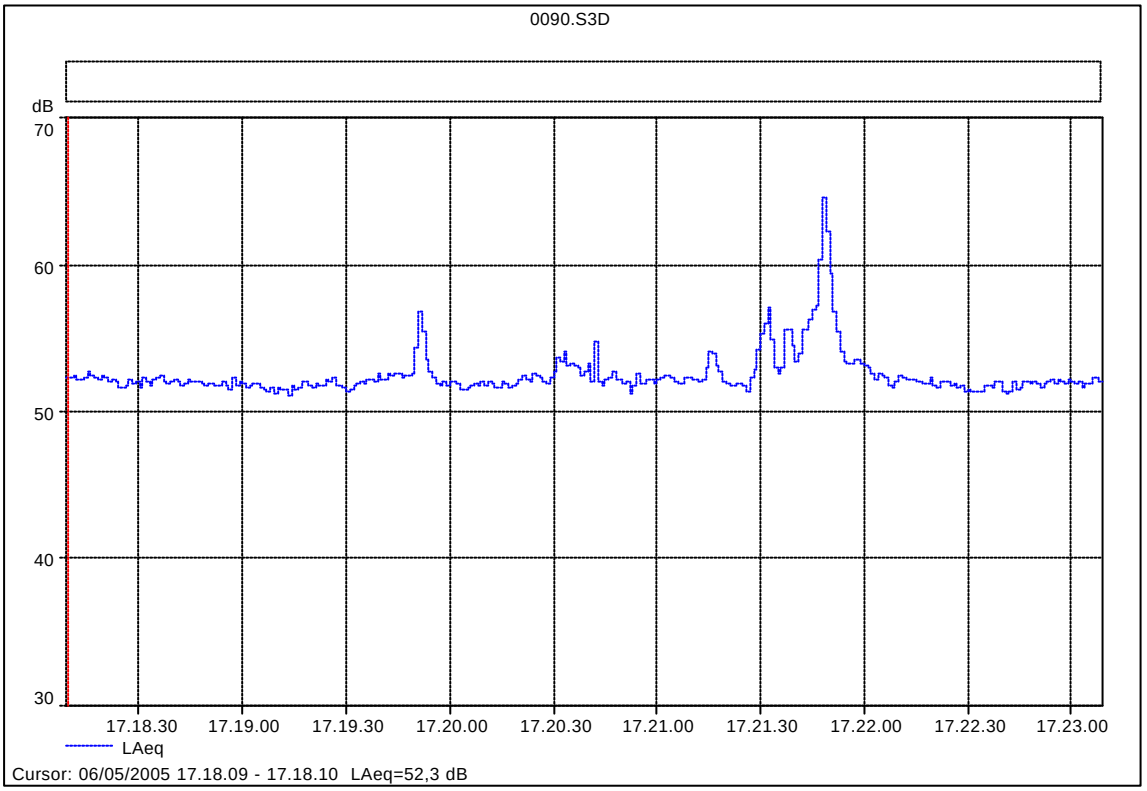
- Audible MT electrical noise
- Audible deaerator vent operations on the (CCPP) HRSG stack
- Audible (CCPP) UT-1 operations
- Audible birds singing


0089.S3D
dB 06/05/2005 17.04.12 - 17.09.12
80
70
60
50
40
30
20
10
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=46,1 dB LFmax=55,4 dB LFmin=40,5 dB


0089.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 17.04.12 - 17.09.12
100
90
80
70
60
50
40
30
20
10
0
42
44
46
48
50
52
54
dB
L1 = 52,6 dB
L5 = 50,0 dB
L10 = 48,9 dB
L50 = 44,9 dB
L90 = 42,3 dB
L95 = 41,9 dB
L99 = 41,3 dB
Level
Cumulative
Cursor: [44,0 ; 44,2[dB Level: 4,0% Cumulative: 63,9%

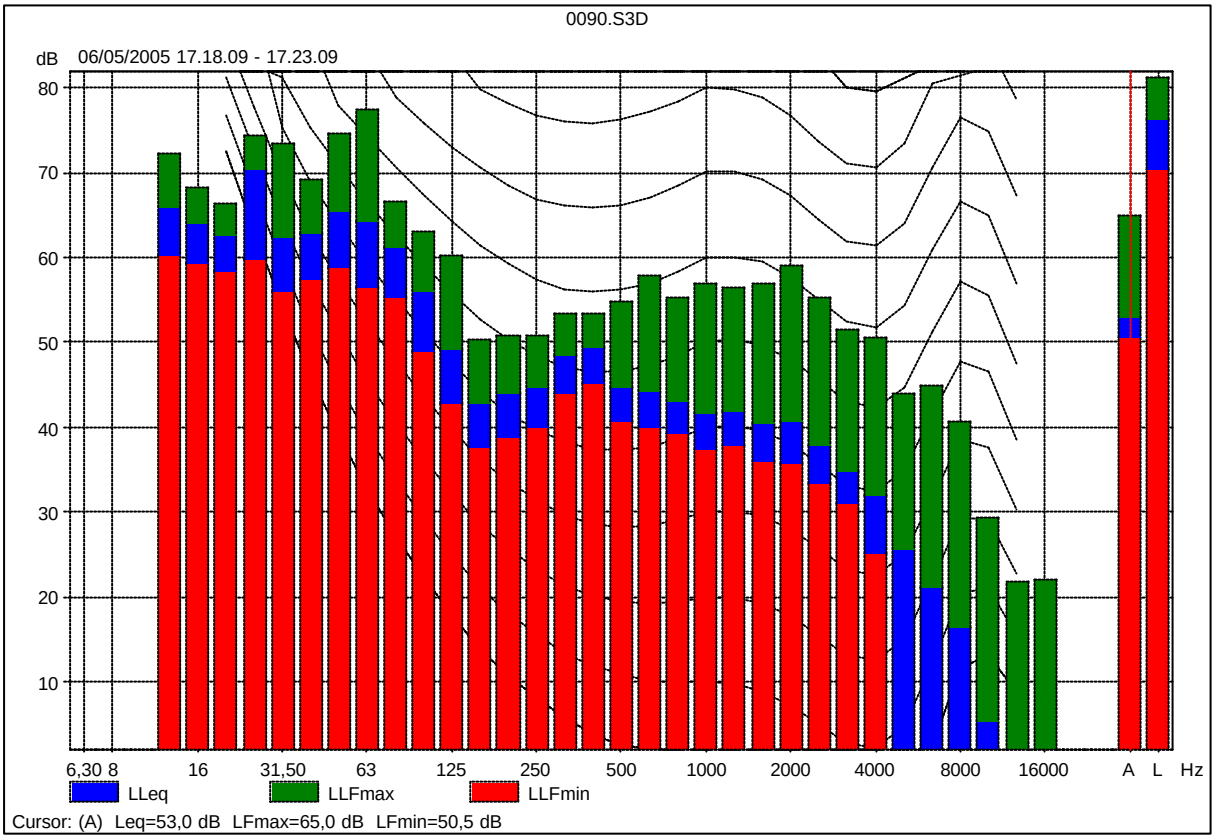
2.7 LOCATION "F" - FENCE LINE ON THE WEST-SIDE

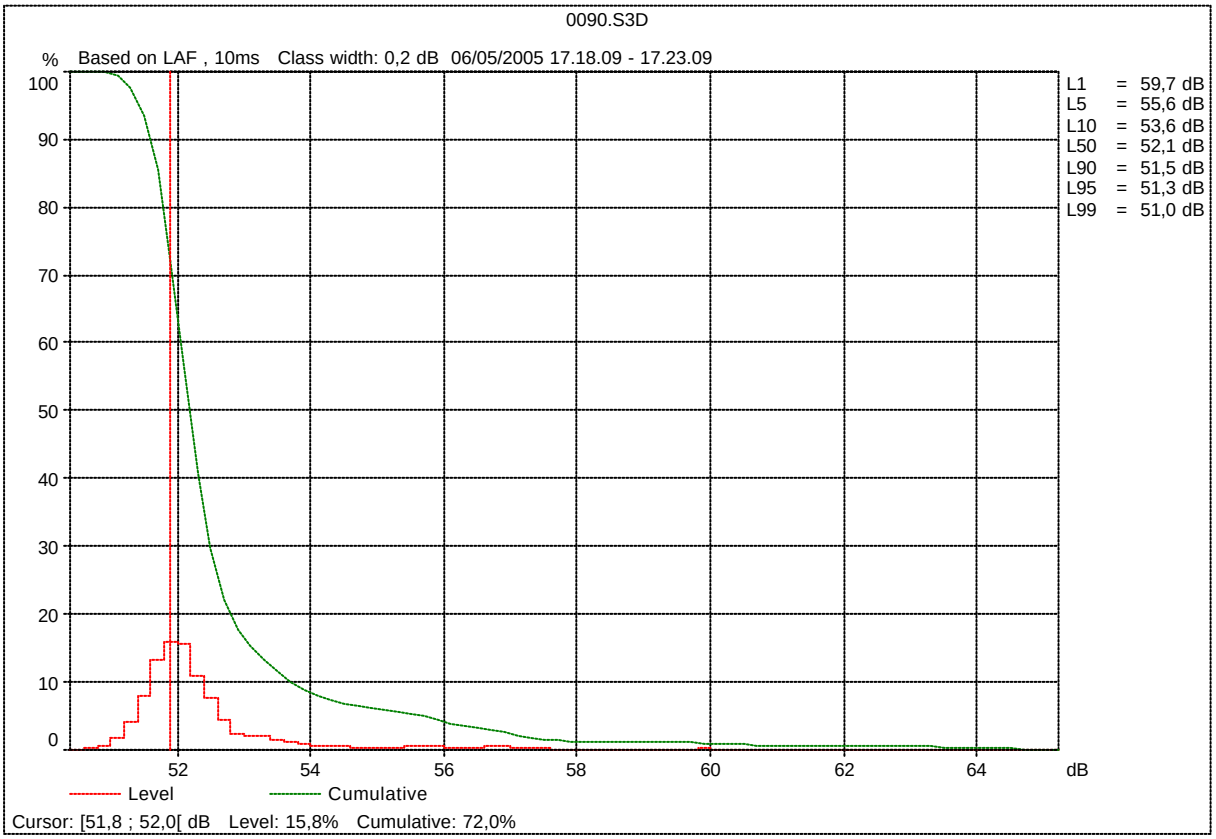
File no. 90	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**53**	50,5	65	89,4	0
Time	17.18.09	0.05.00						
Date	06/05/2005							



Notes:

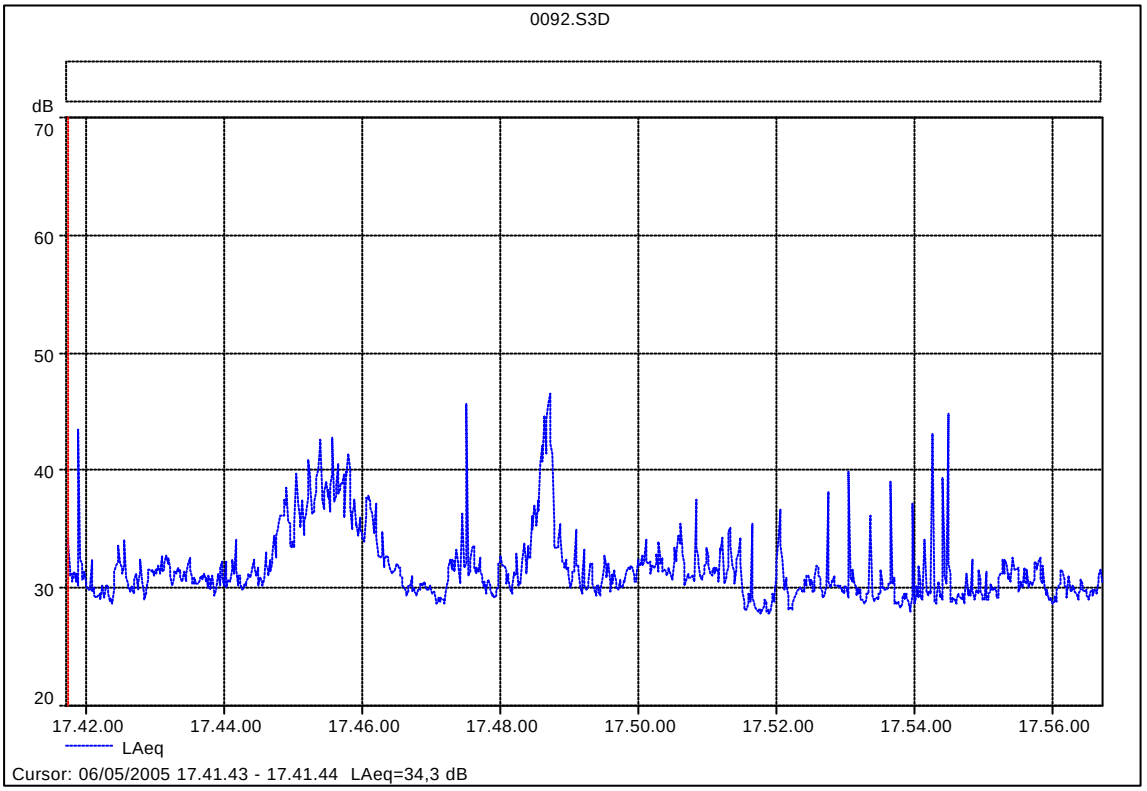
- Audible (CCPP) ACC operations
- Audible MT electrical noise
- Audible lorry and excavator operating inside the CCPP on the S side of the FFC (lorry from 17.21.30 (hours.minutes.seconds) to 17.22.00, excavator from 17.19.30 to 17.20.00)


0090.S3D
dB 06/05/2005 17.18.09 - 17.23.09
80
70
60
50
40
30
20
10
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=53,0 dB LFmax=65,0 dB LFmin=50,5 dB


0090.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 17.18.09 - 17.23.09
100
90
80
70
60
50
40
30
20
10
0
52
54
56
58
60
62
64
dB
L1 = 59,7 dB
L5 = 55,6 dB
L10 = 53,6 dB
L50 = 52,1 dB
L90 = 51,5 dB
L95 = 51,3 dB
L99 = 51,0 dB
Level
Cumulative
Cursor: [51,8 ; 52,0[dB Level: 15,8% Cumulative: 72,0%

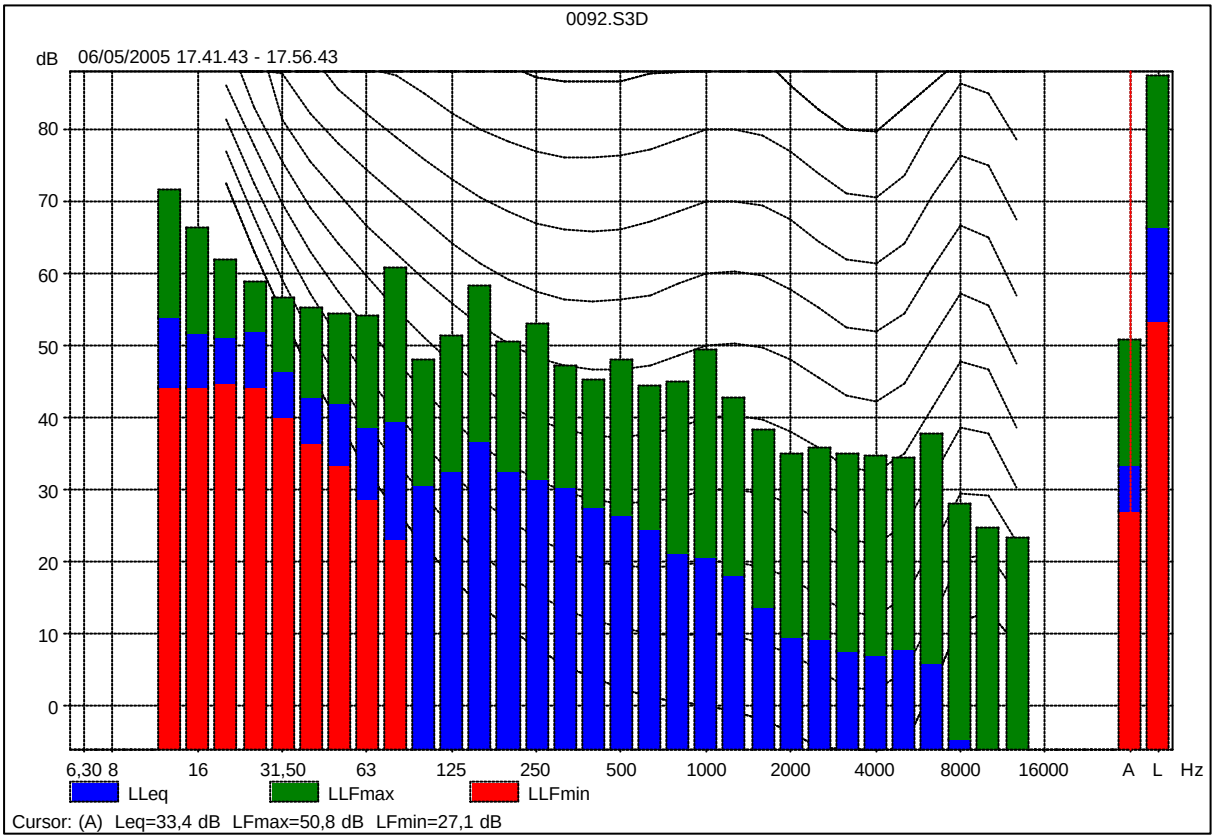
2.8 LOCATION "G" - C.NA LA ROTTA

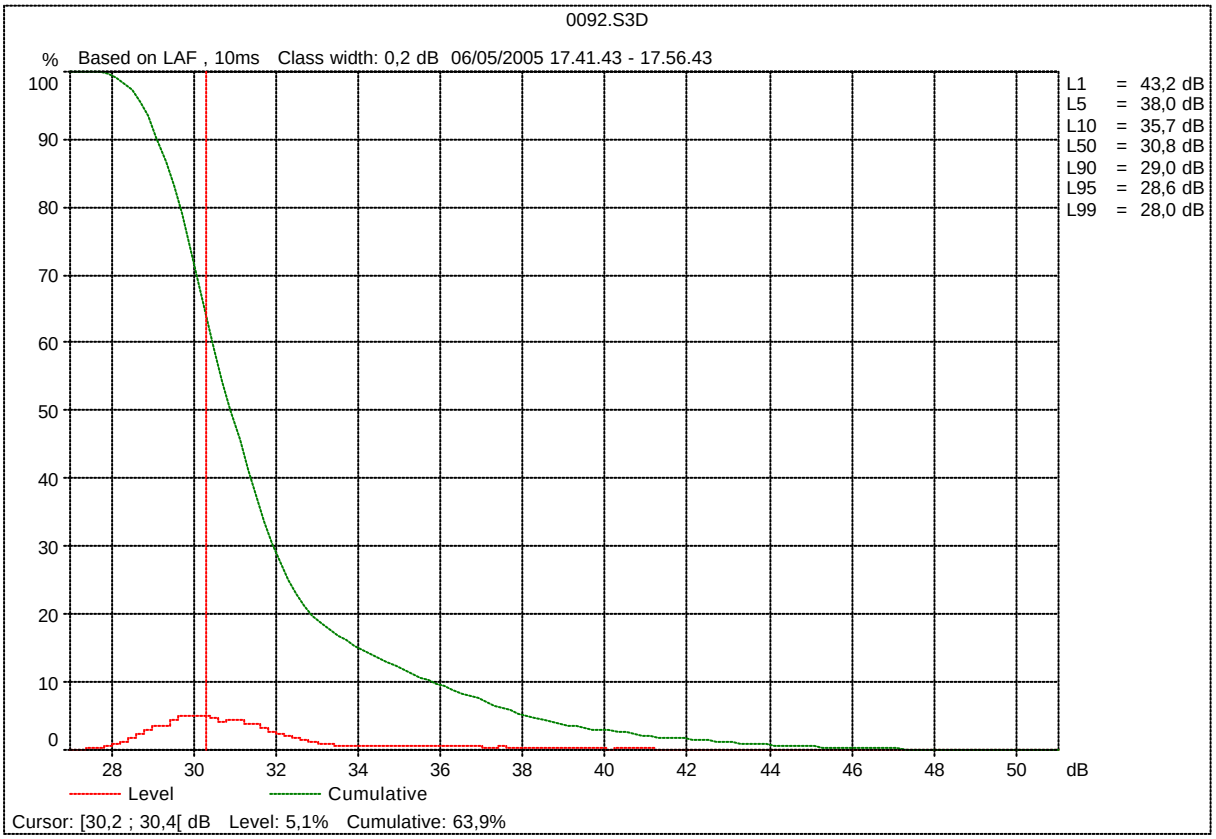
File no. 92	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**33,4**	27,1	50,8	93	0
Time	17.41.43	0.15.00						
Date	06/05/2005							



Notes:

- Audible aeroplane far away
- Slightly audible deaerator vent operations on the (CCPP) HRSG stack
- Audible momentary manspeaking in the farm
- Audible birds singing
- Since the extremely low levels of noise recorded during the integration, a contribution due to the presence of FWI, S&W and TEE operators has been presumably detected


0092.S3D
dB 06/05/2005 17.41.43 - 17.56.43
80
70
60
50
40
30
20
10
0
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=33,4 dB LFmax=50,8 dB LFmin=27,1 dB


0092.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 17.41.43 - 17.56.43
100
90
80
70
60
50
40
30
20
10
0
28
30
32
34
36
38
40
42
44
46
48
50
dB
L1 = 43,2 dB
L5 = 38,0 dB
L10 = 35,7 dB
L50 = 30,8 dB
L90 = 29,0 dB
L95 = 28,6 dB
L99 = 28,0 dB
Level
Cumulative
Cursor: [30,2 ; 30,4[dB Level: 5,1% Cumulative: 63,9%

ATTACHMENT III

NIGHT-TIME ENVIRONMENTAL NOISE LEVEL ASSESSMENT

1.0 TEST PROCEDURE

The measures were performed in accordance with the Sound Test Procedure, Appendix C of the Performance Test Procedure. Information on the utilized sound level meter are reported under the Attachment IV.

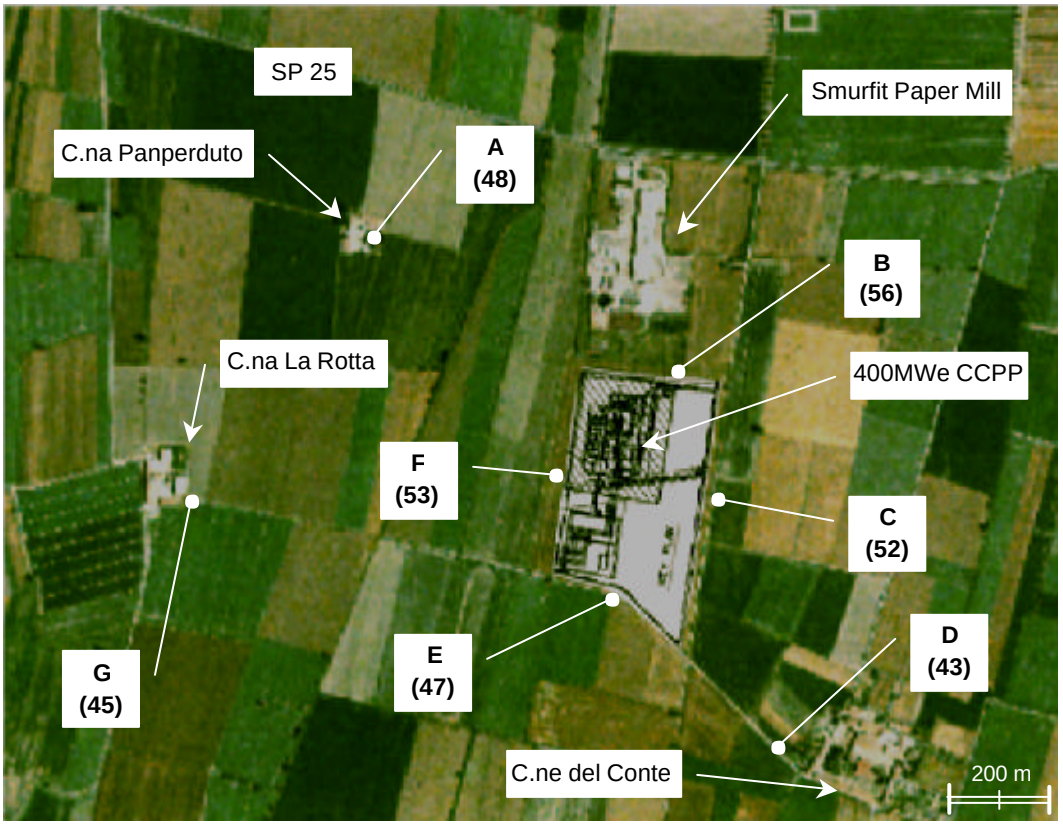
Statistical, frequency and time profile measurements were performed to characterize the acoustic field at the nearest community locations and at the CCPP fence line during night-time. The locations monitored in the previous surveys, when the CCPP was not already operating, have been tested. The measures were executed in the night between May 6th and 7th, 2005 by Foster Wheeler Italiana (Mr. Gorletta, Mr. Previati) always in presence of Tractebel Energy Engineering (Mr. Vervaeke) and, for point "A" only, in presence also of Stone & Webster (Mr. Colin). Mr. Negri of Foster Wheeler Italiana took part in the survey up to point "D" included. The diagram of the CCPP load, giving evidence that during the performed measures the base load condition was achieved, is reported under the Attachment V.

The doors of the machinery rooms were closed before of the sound test beginning, the control room operators were recommended to not open them during the test and the doors were checked to be closed after the execution of the test.

The following para. 2.0 report the various parameters recorded during the measures. By mutual agreement with Tractebel Energy Engineering (Mr. Vervaeke), the measures started some minutes later the beginning of the night-time reference period (22.00) and the integration times have been 15 minutes for the measures at the community locations and 5 minutes for the measures at the CCPP fence line.

2.0 RESULTS

2.1 MEASUREMENTS POINTS LOCATIONS AND SUMMARY OF THE RESULTS



General Notes:

- Weather report:

  (average of 7 readings)

  Temperature: 13 °C
  Relative Humidity: 48 %
  almost absence of wind, clear sky, no precipitation

- Smurfit WWT machinery was heard to be on operation and no steam vents to atmosphere produced by the Paper Mill were noted during the measures

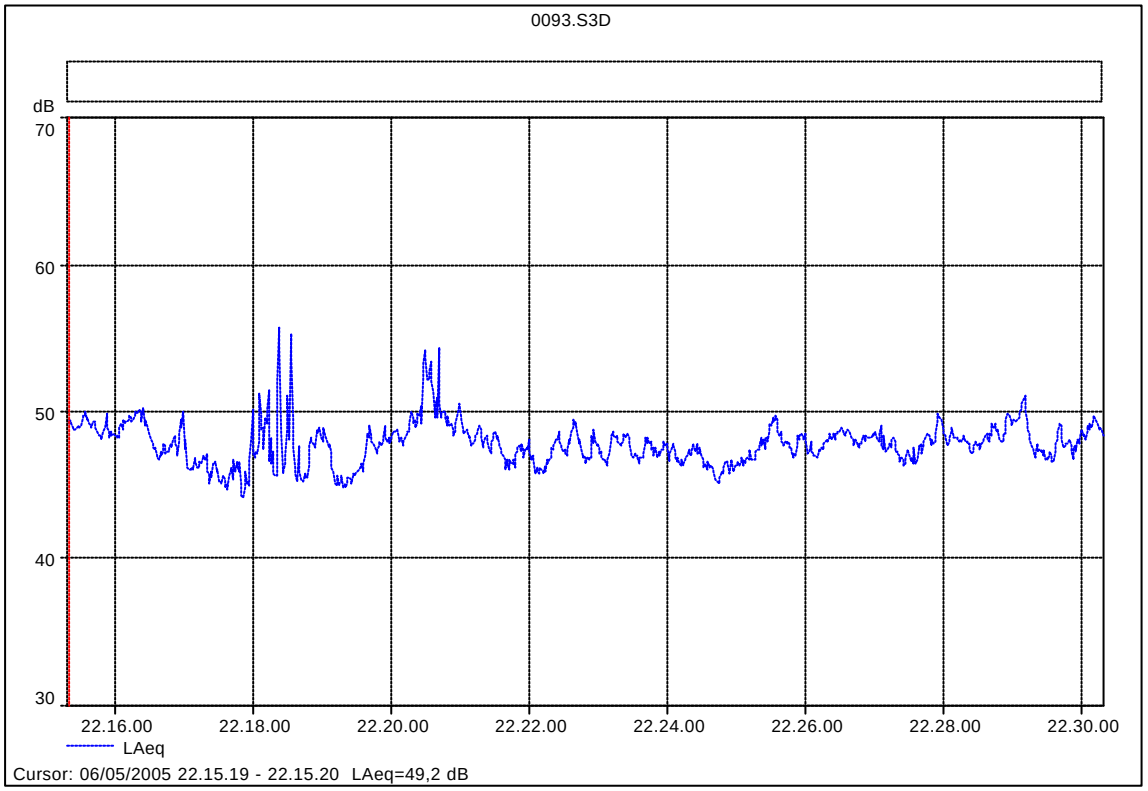
- No tonal or impulsive components were found on all the monitored locations as a consequence of the CCPP operations, according to the survey procedure prescribed by the DMA 16/03/1998, attachment B, points 9, 10 and 11, as evidenced by the diagrams of the 1/3 octave bands minimum spectral levels against the ISO 226 loudness level contours reported at the following points from 2.2 to 2.8

- With respect to the previous surveys, when the CCPP was not yet operating, the location “D” has been moved 30 m about towards the CCPP in order to minimize the risk of alarming the Cascine del Conte dogs to not record their barking

- The numbers in brackets report the detected equivalent continuous sound pressure levels (L_{Aeq}) rounded to the nearest whole number

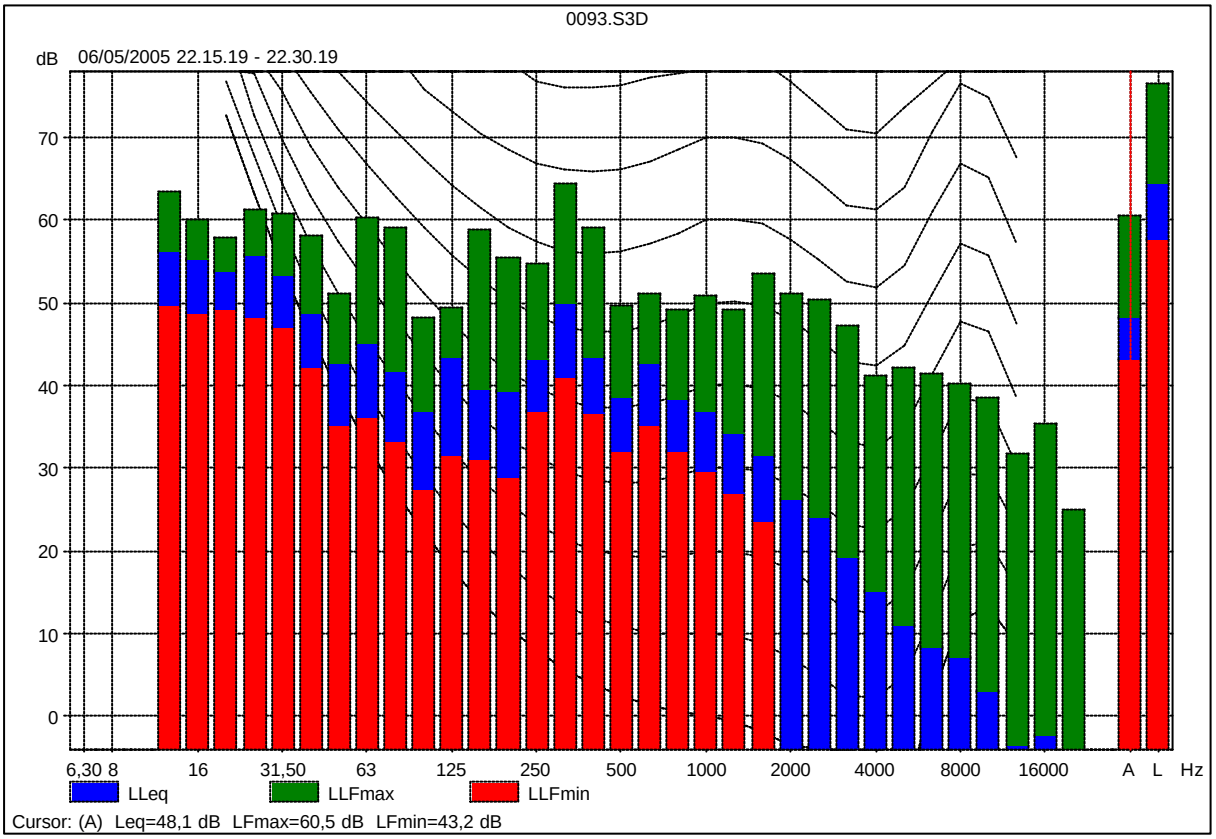
2.2 LOCATION "A" - C. NA PANPERDUTO

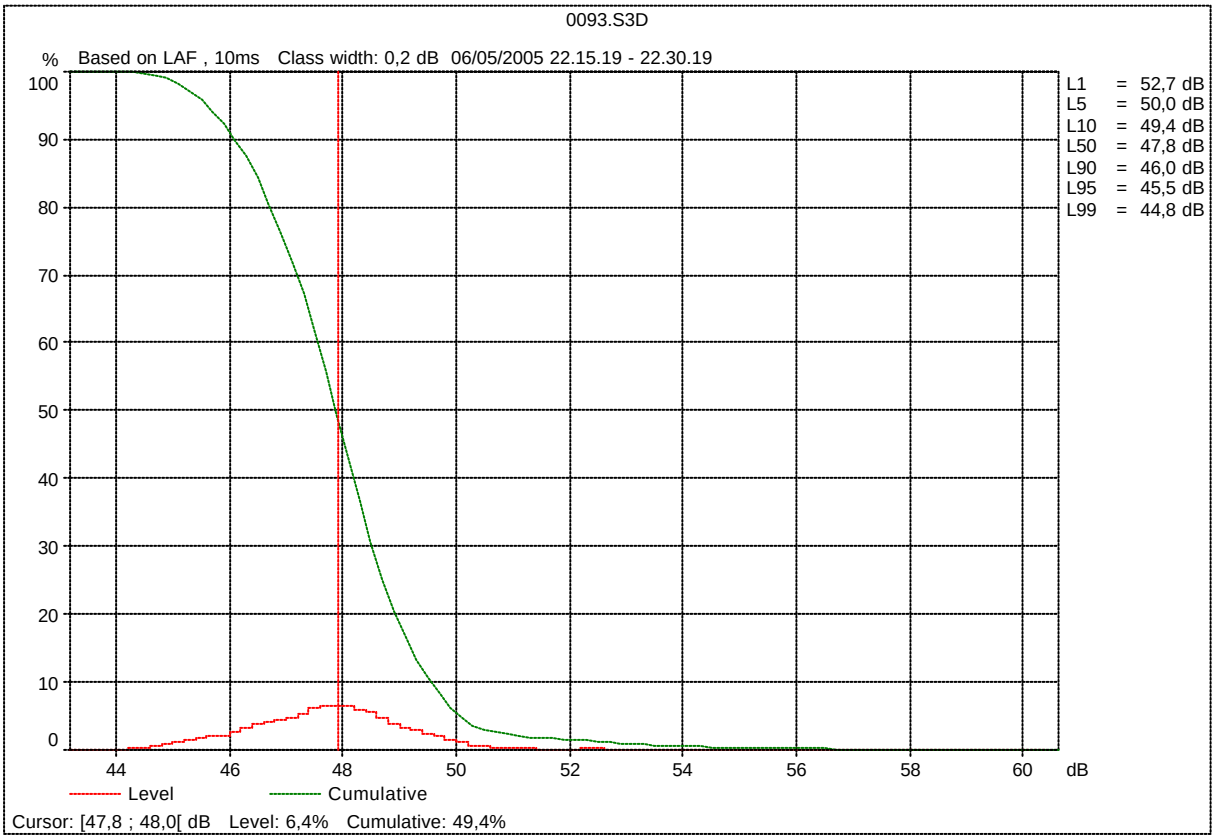
File no. 93	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**48,1**	43,2	60,5	82,7	0
Time	22.15.19	0.15.00						
Date	06/05/2005							



Notes:

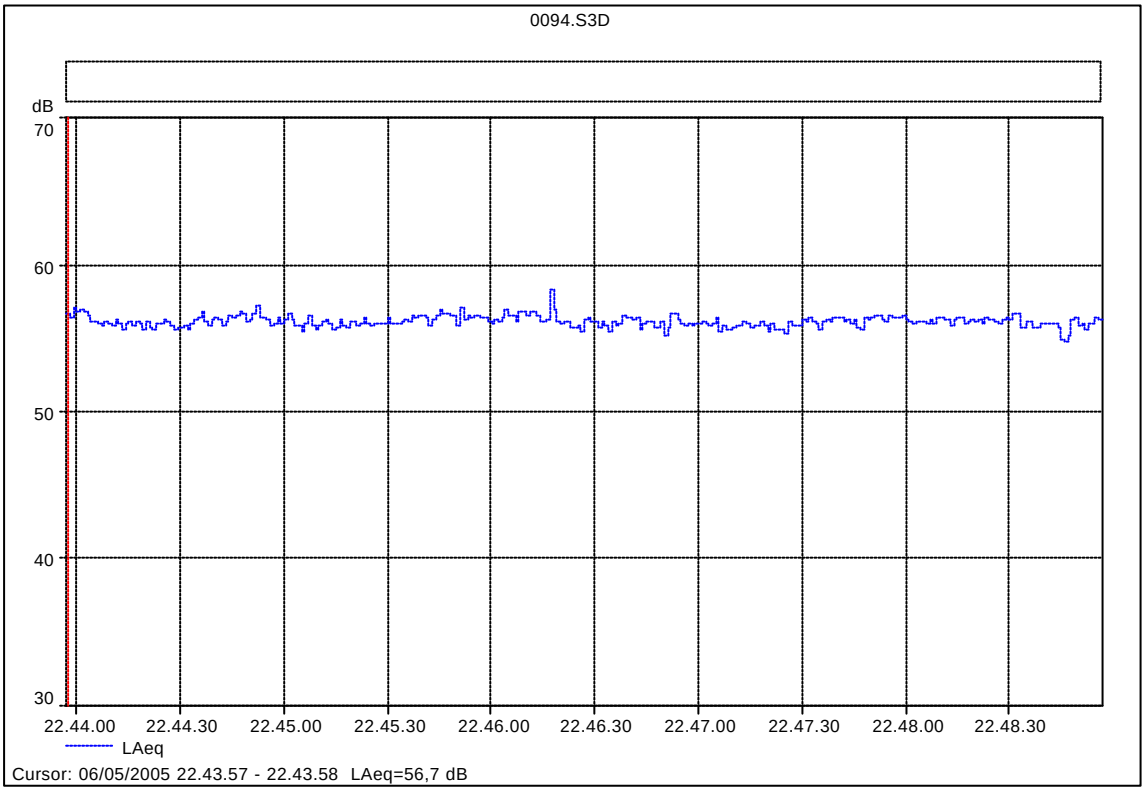
- Audible occasional cars passage on SP25
- Audible Smurfit WWT machinery operations (more contributive than during the day-time measure)
- Audible car going inside the farm


0093.S3D
dB 06/05/2005 22.15.19 - 22.30.19
70
60
50
40
30
20
10
0
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=48,1 dB LFmax=60,5 dB LFmin=43,2 dB


0093.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 22.15.19 - 22.30.19
100
90
80
70
60
50
40
30
20
10
0
44
46
48
50
52
54
56
58
60
dB
L1 = 52,7 dB
L5 = 50,0 dB
L10 = 49,4 dB
L50 = 47,8 dB
L90 = 46,0 dB
L95 = 45,5 dB
L99 = 44,8 dB
Level
Cumulative
Cursor: [47,8 ; 48,0[dB Level: 6,4% Cumulative: 49,4%

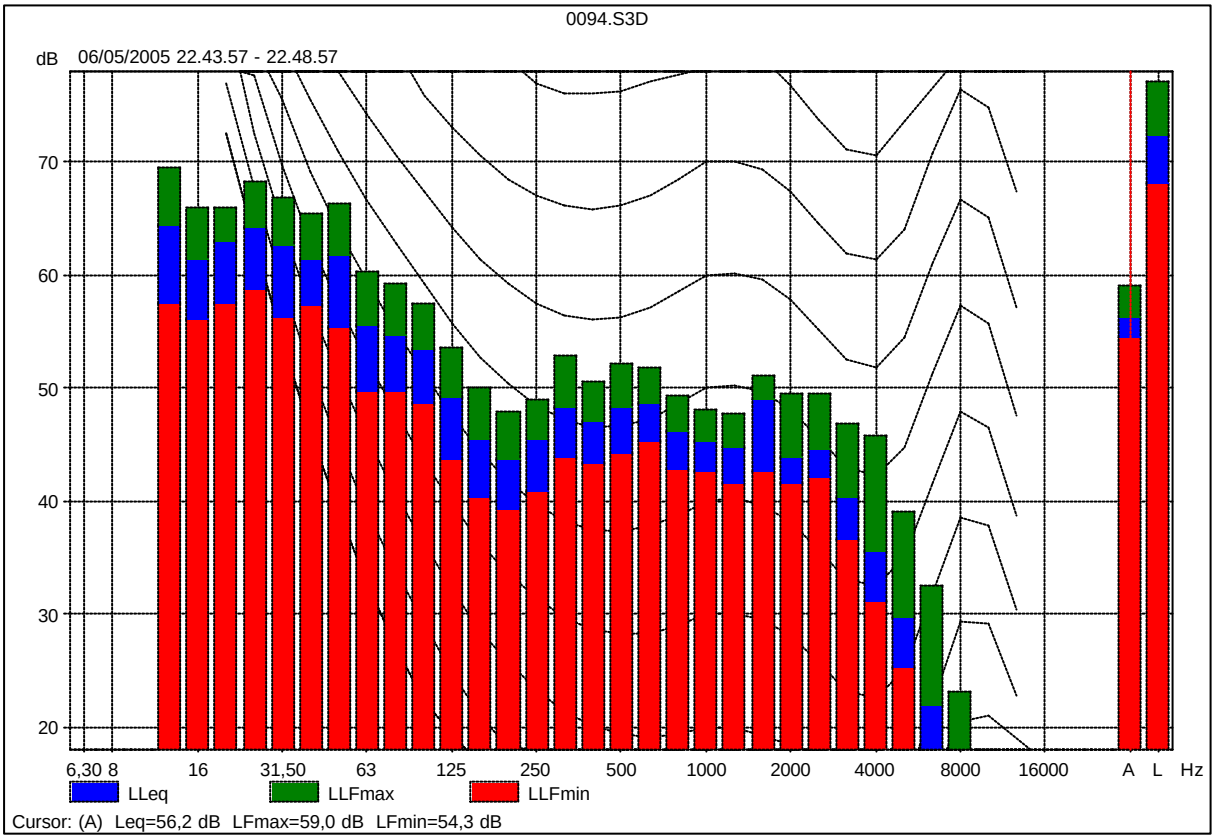
2.3 LOCATION "B" - FENCE LINE ON THE NORTH-SIDE

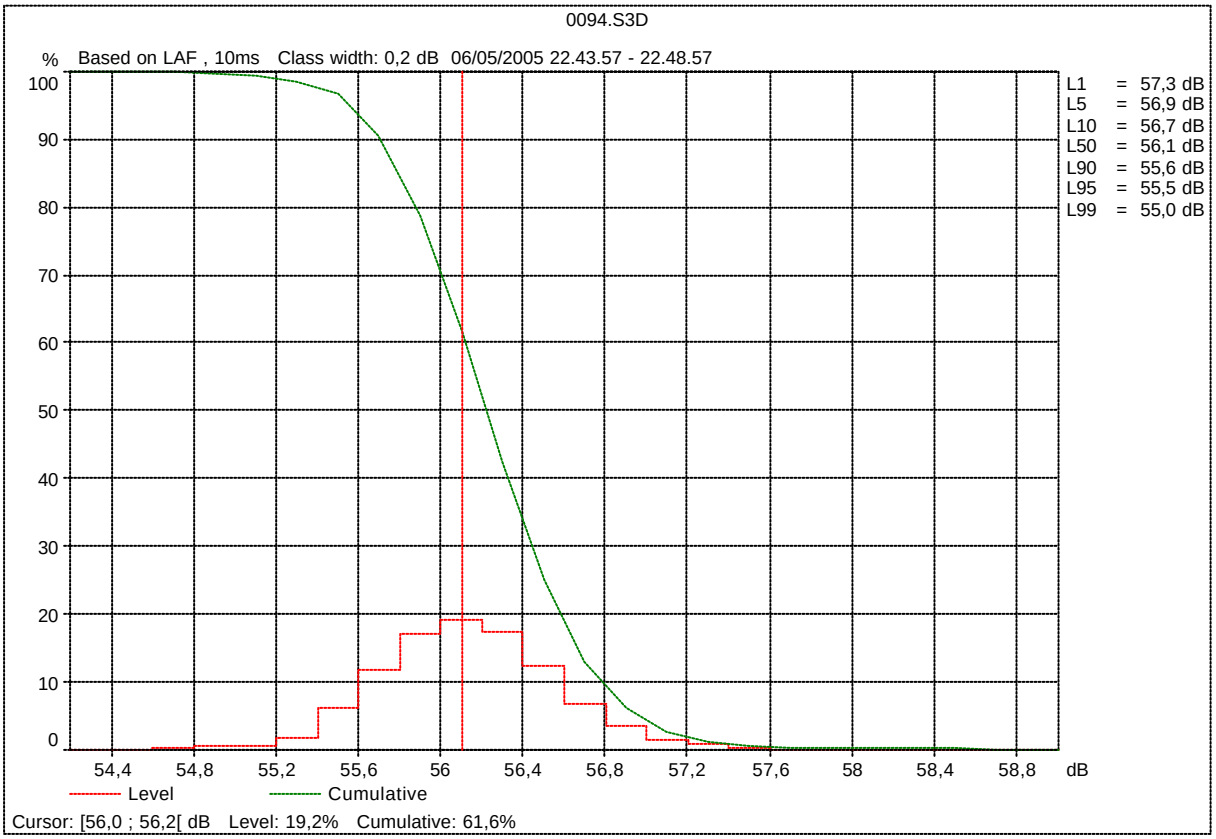
File no. 94	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**56,2**	54,3	59	86,5	0
Time	22.43.57	0.05.00						
Date	06/05/2005							



Notes:

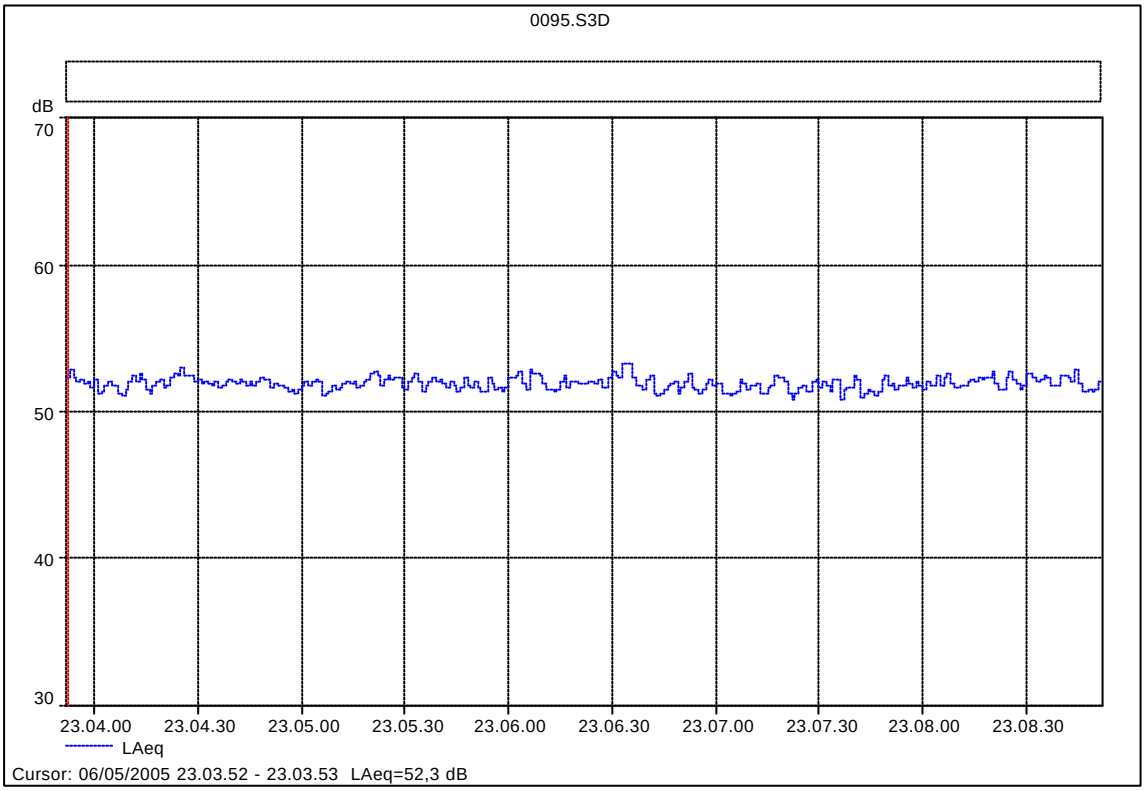
- Audible deaerator vent operations on the (CCPP) HRSG stack (less contributive than during the day-time measure)
- Audible Smurfit WWT machinery operations (more contributive than during the day-time measure)


0094.S3D
dB 06/05/2005 22.43.57 - 22.48.57
70
60
50
40
30
20
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=56,2 dB LFmax=59,0 dB LFmin=54,3 dB


0094.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 22.43.57 - 22.48.57
100
90
80
70
60
50
40
30
20
10
0
L1 = 57,3 dB
L5 = 56,9 dB
L10 = 56,7 dB
L50 = 56,1 dB
L90 = 55,6 dB
L95 = 55,5 dB
L99 = 55,0 dB
54,4
54,8
55,2
55,6
56
56,4
56,8
57,2
57,6
58
58,4
58,8
dB
Level
Cumulative
Cursor: [56,0 ; 56,2[dB Level: 19,2% Cumulative: 61,6%

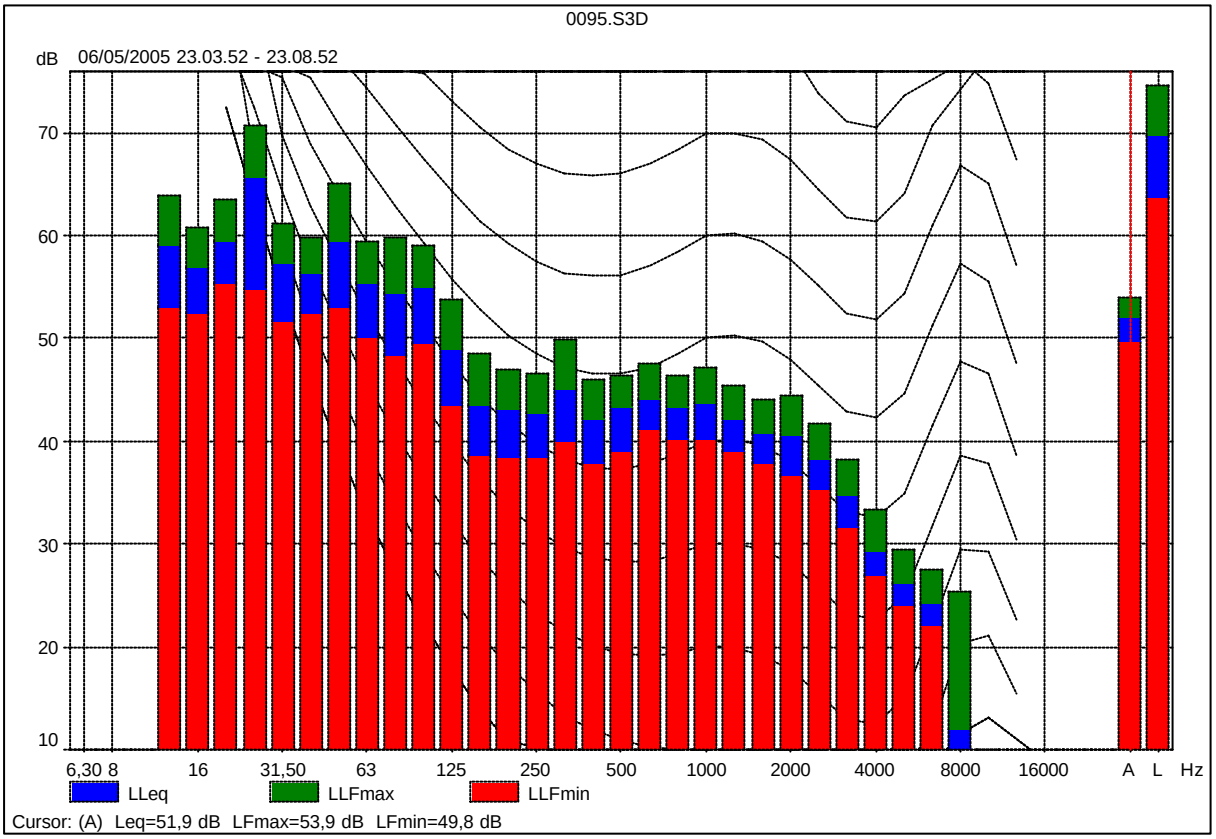
2.4 LOCATION "C" - FENCE LINE ON THE EASTH-SIDE

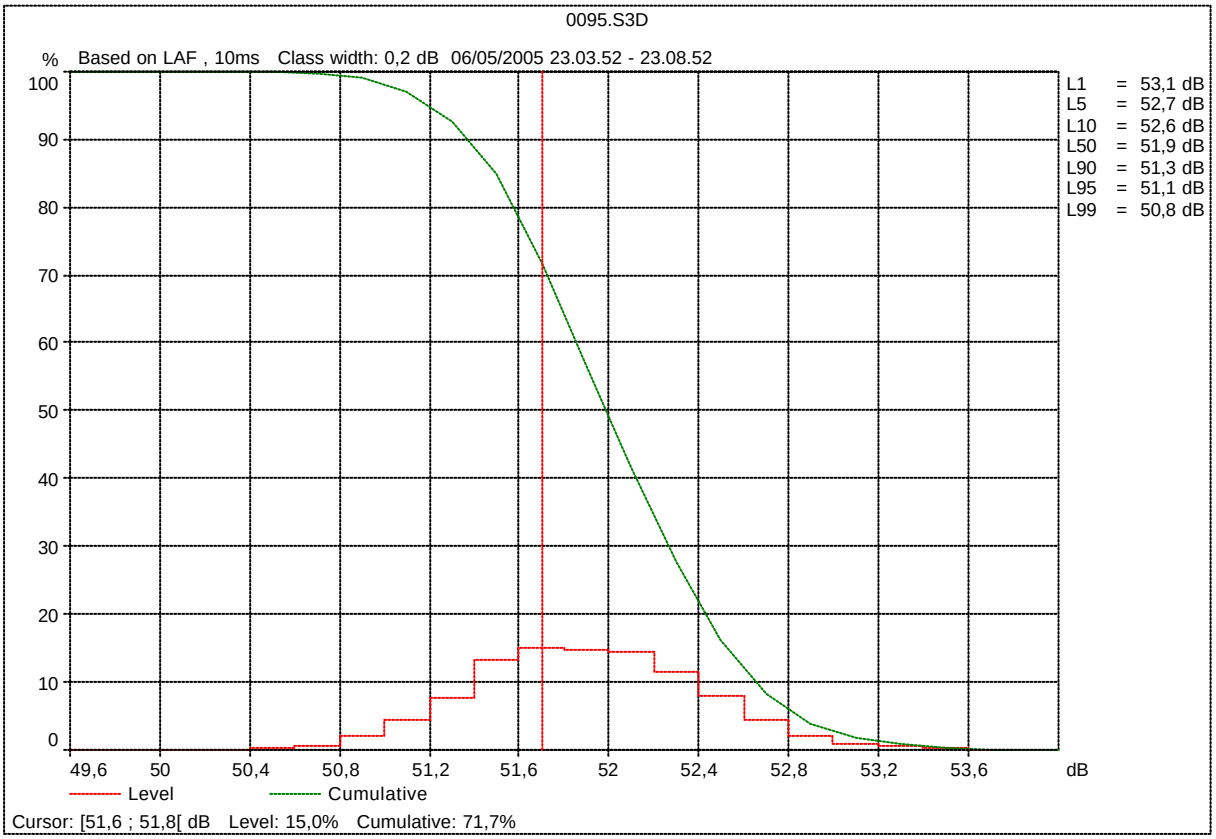
File no. 95	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**51,9**	49,8	53,9	82,8	0
Time	23.03.52	0.05.00						
Date	06/05/2005							



Notes:

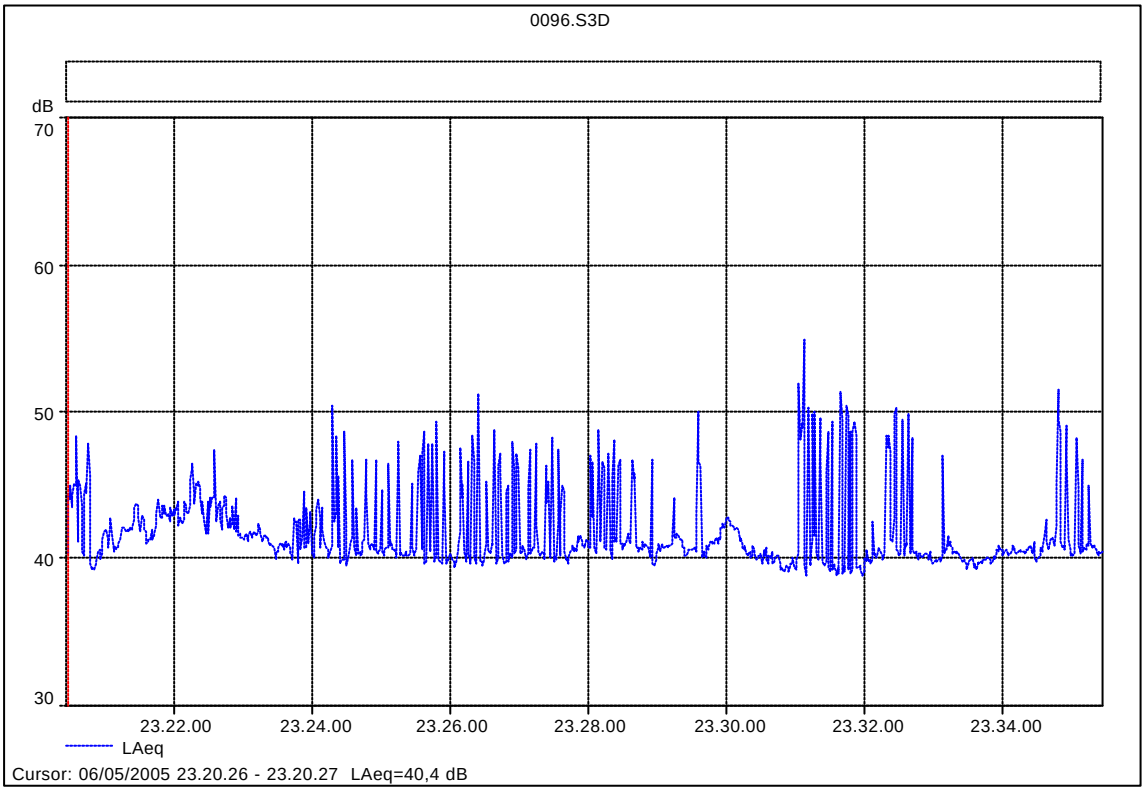
- Audible (CCPP) Gas Station operations
- Audible deaerator vent operations on the (CCPP) HRSG stack (less contributive than during the day-time measure)


0095.S3D
dB 06/05/2005 23.03.52 - 23.08.52
70
60
50
40
30
20
10
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=51,9 dB LFmax=53,9 dB LFmin=49,8 dB


0095.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 23.03.52 - 23.08.52
100
90
80
70
60
50
40
30
20
10
0
L1 = 53,1 dB
L5 = 52,7 dB
L10 = 52,6 dB
L50 = 51,9 dB
L90 = 51,3 dB
L95 = 51,1 dB
L99 = 50,8 dB
49,6
50
50,4
50,8
51,2
51,6
52
52,4
52,8
53,2
53,6
dB
Level
Cumulative
Cursor: [51,6 ; 51,8[dB Level: 15,0% Cumulative: 71,7%

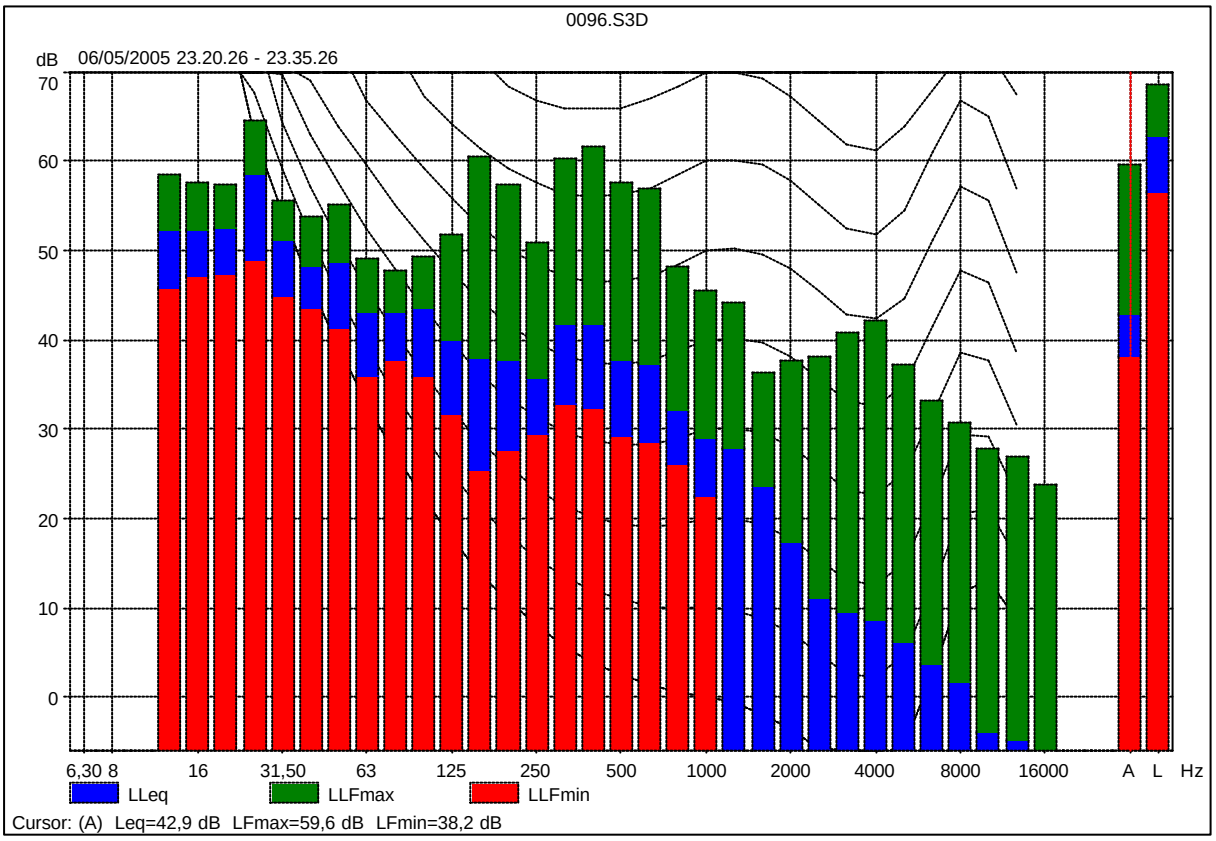
2.5 LOCATION "D" - C.NE DEL CONTE

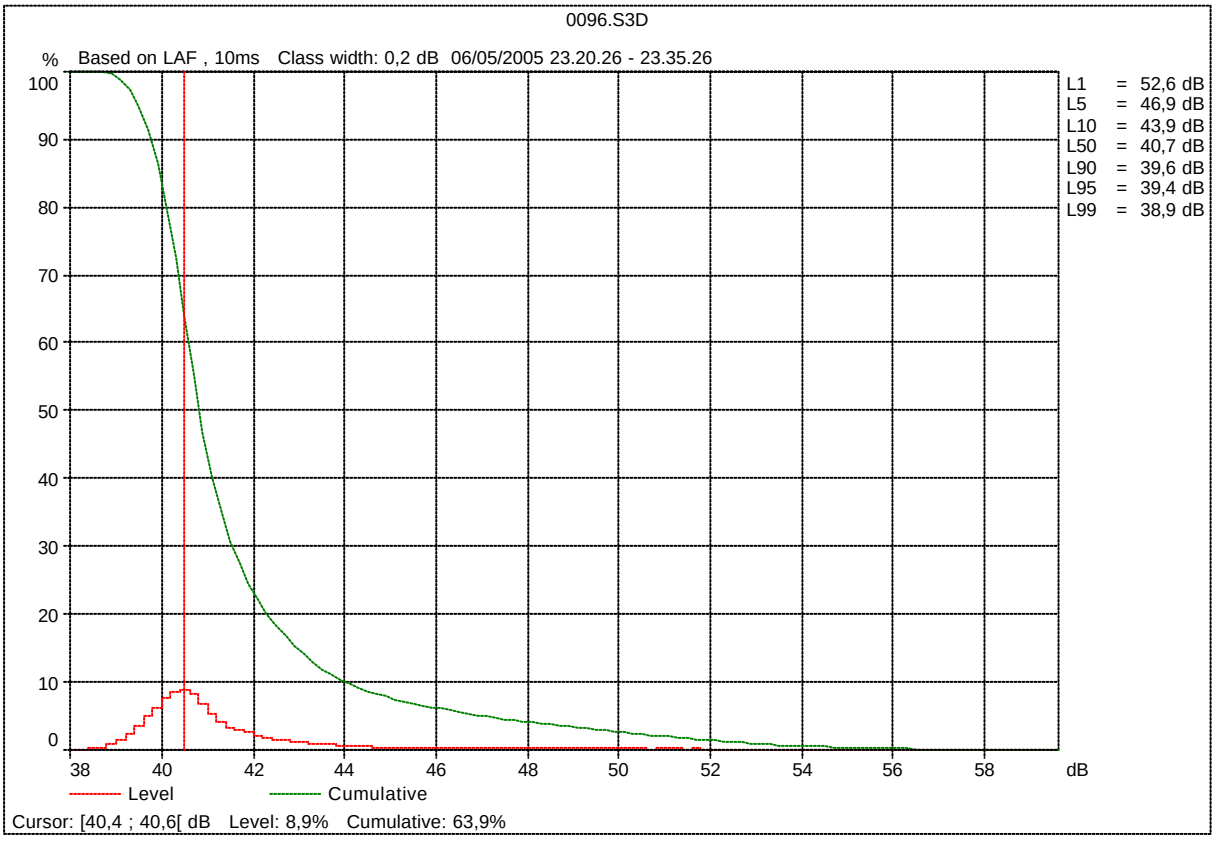
File no. 96	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**42,9**	38,2	59,6	77,3	0
Time	23.20.26	0.15.00						
Date	06/05/2005							



Notes:

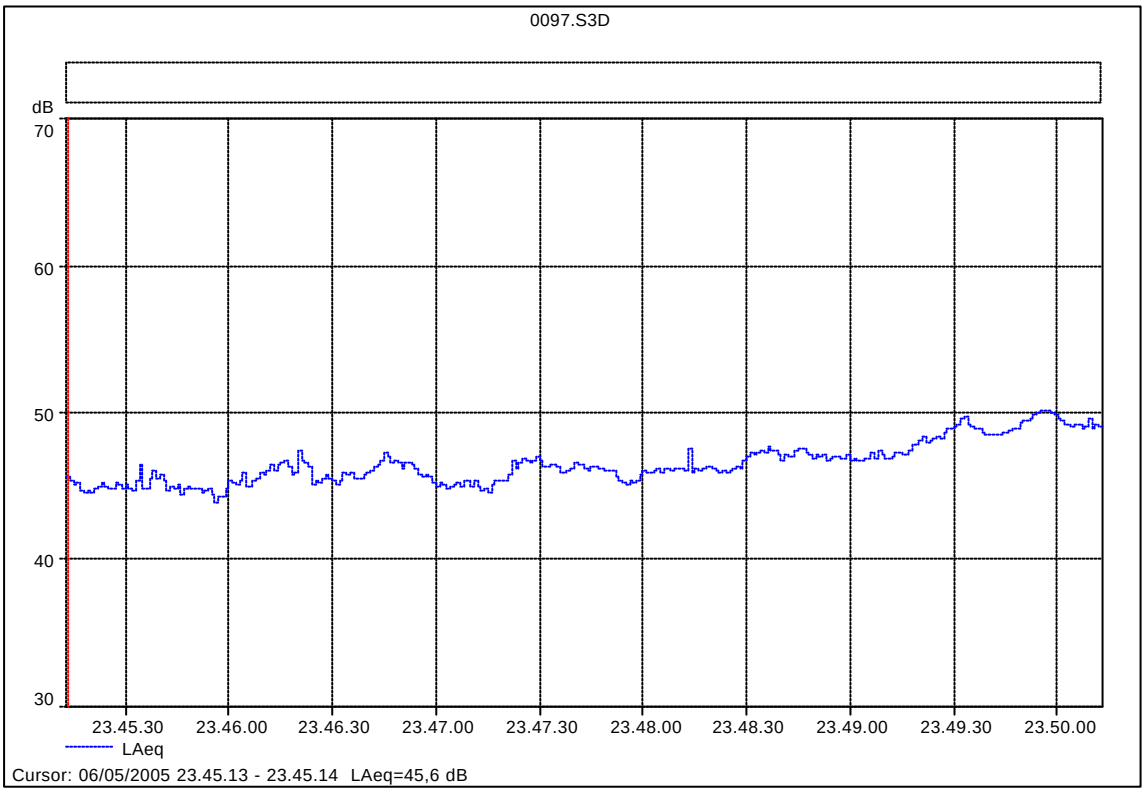
- Audible aeroplane far away
- Audible deaerator vent operations on the (CCPP) HRSG stack (less contributive than during the day-time measure)
- Audible (CCPP) UT-1 operations
- Audible dogs intermittently barking close to the farm


0096.S3D
dB 06/05/2005 23.20.26 - 23.35.26
70
60
50
40
30
20
10
0
6,30 8 16 31,50 63 125 250 500 1000 2000 4000 8000 16000 A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=42,9 dB LFmax=59,6 dB LFmin=38,2 dB


0096.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 23.20.26 - 23.35.26
100
90
80
70
60
50
40
30
20
10
0
38 40 42 44 46 48 50 52 54 56 58 dB
L1 = 52,6 dB
L5 = 46,9 dB
L10 = 43,9 dB
L50 = 40,7 dB
L90 = 39,6 dB
L95 = 39,4 dB
L99 = 38,9 dB
Level
Cumulative
Cursor: [40,4 ; 40,6[dB Level: 8,9% Cumulative: 63,9%

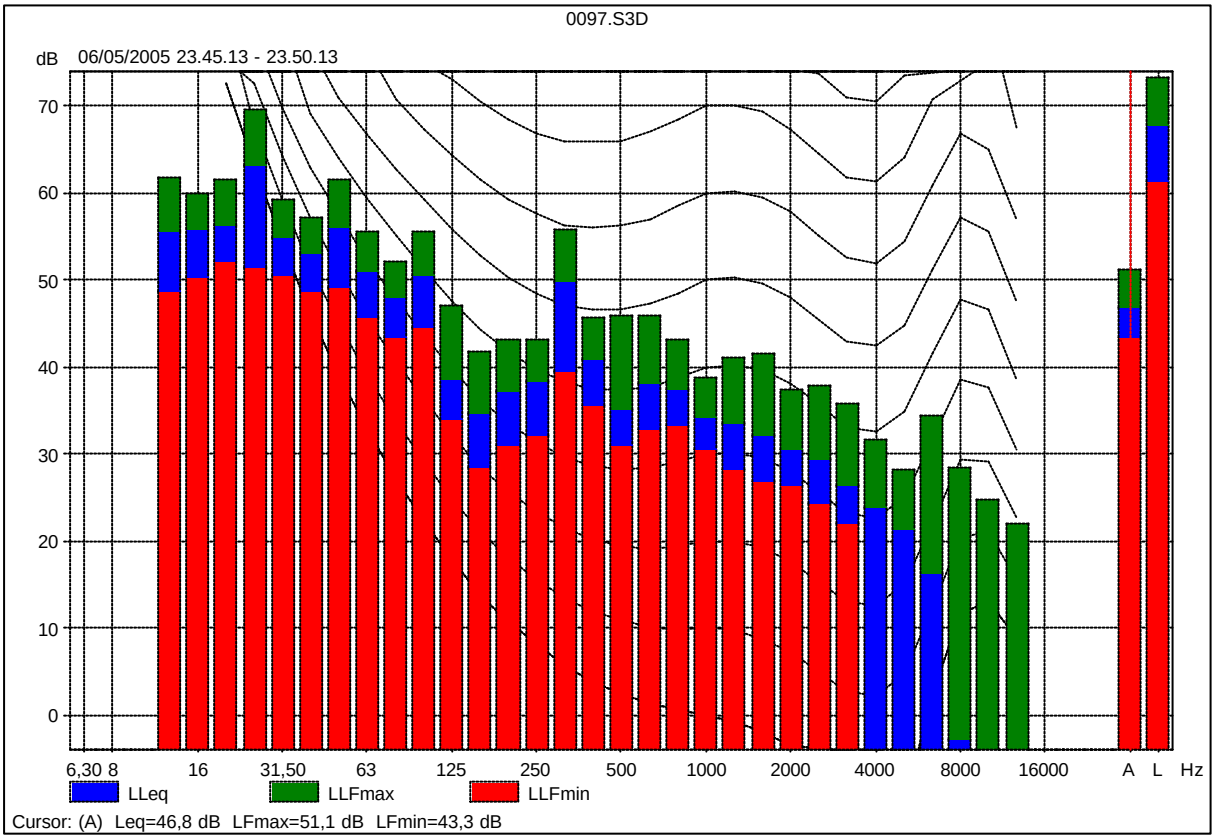
2.6 LOCATION "E" - FENCE LINE ON THE SOUTH-SIDE

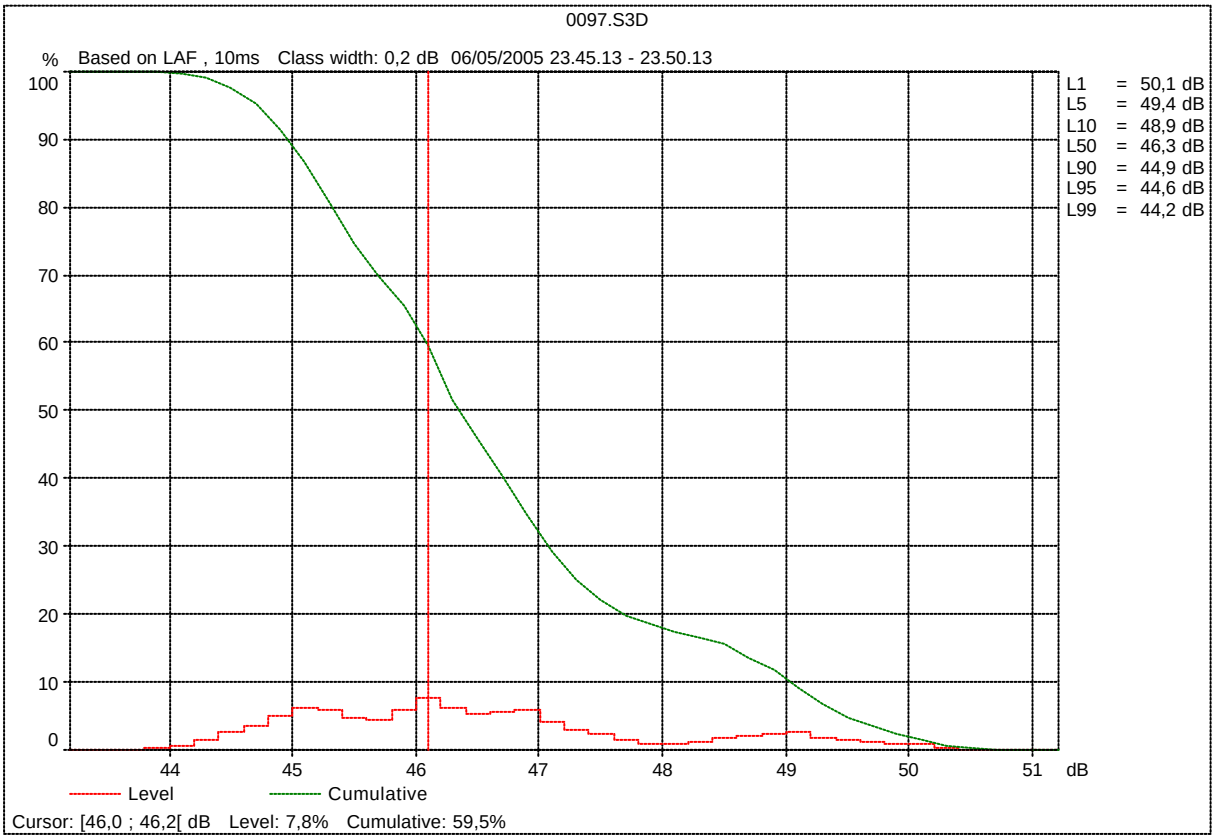
File no. 97	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**46,8**	43,3	51,1	81,6	0
Time	23.45.13	0.05.00						
Date	06/05/2005							



Notes:

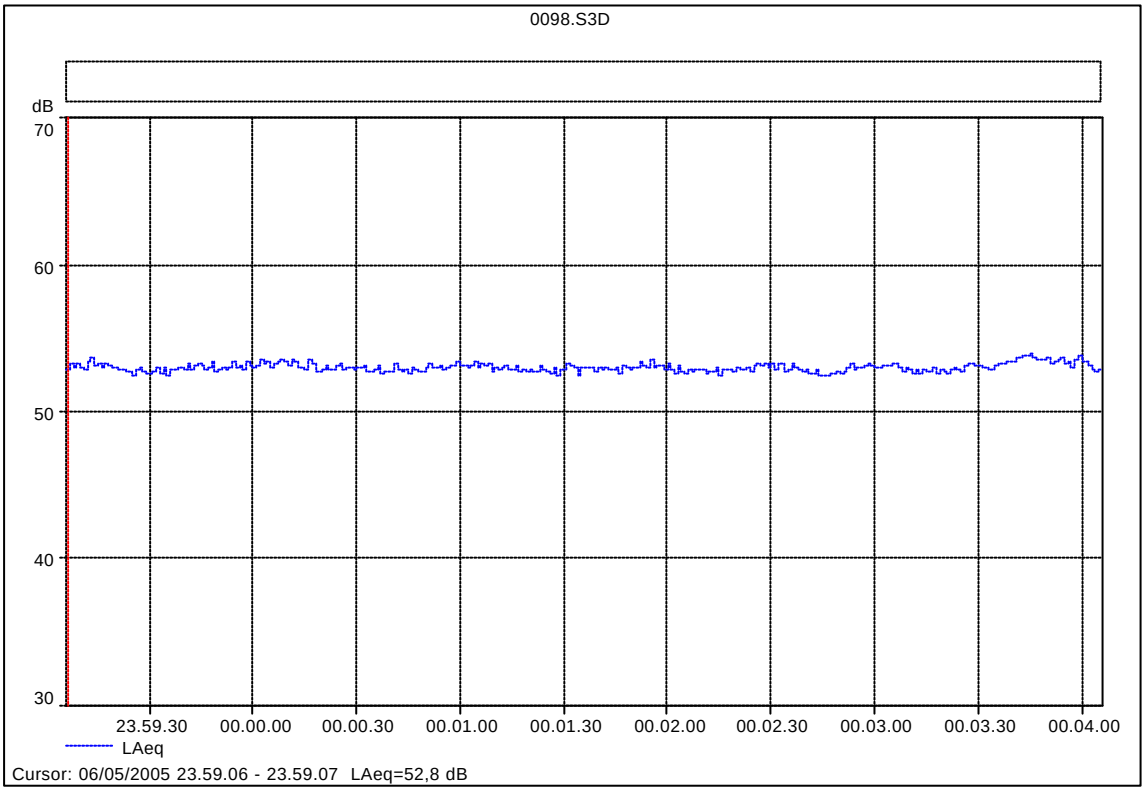
- Audible MT electrical noise
- Audible deaerator vent operations on the (CCPP) HRSG stack (less contributive than during the day-time measure)
- Audible (CCPP) UT-1 operations


0097.S3D
dB 06/05/2005 23.45.13 - 23.50.13
70
60
50
40
30
20
10
0
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=46,8 dB LFmax=51,1 dB LFmin=43,3 dB


0097.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 23.45.13 - 23.50.13
100
90
80
70
60
50
40
30
20
10
0
44
45
46
47
48
49
50
51
dB
L1 = 50,1 dB
L5 = 49,4 dB
L10 = 48,9 dB
L50 = 46,3 dB
L90 = 44,9 dB
L95 = 44,6 dB
L99 = 44,2 dB
Level
Cumulative
Cursor: [46,0 ; 46,2[dB Level: 7,8% Cumulative: 59,5%

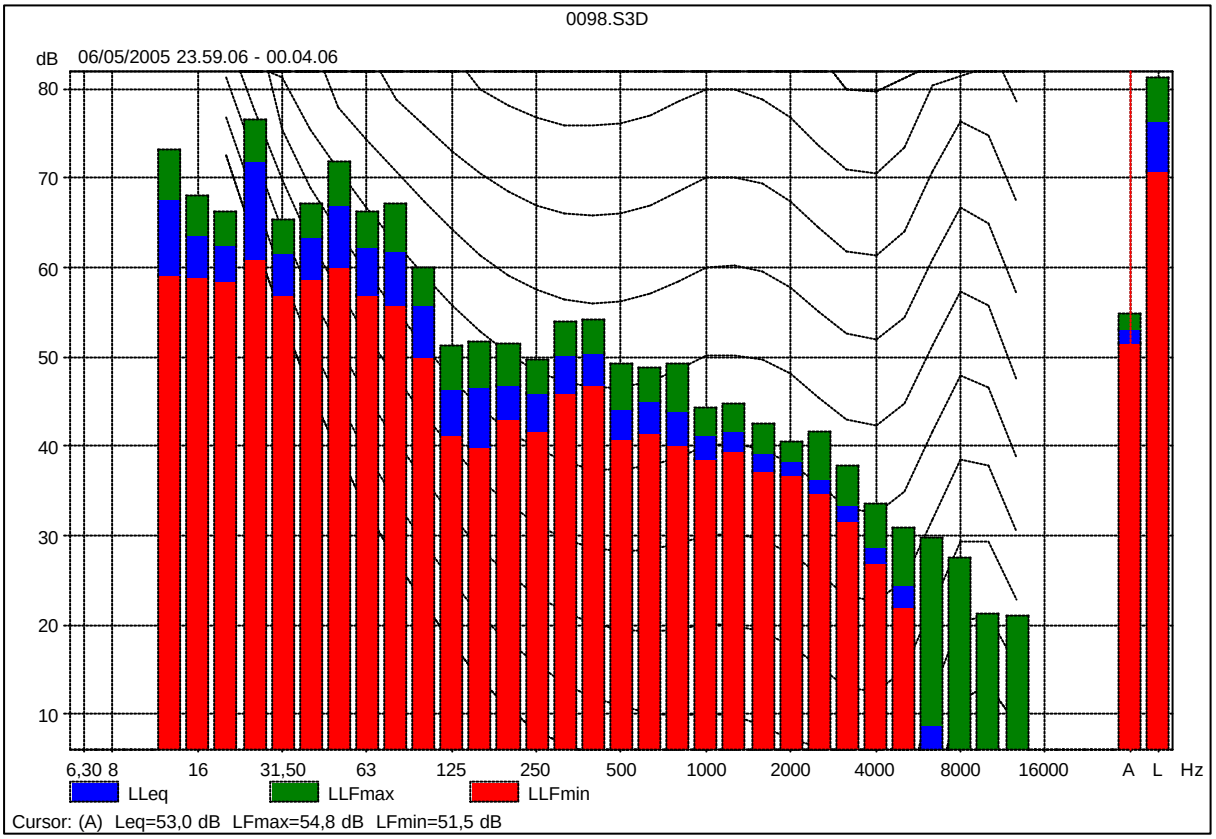
2.7 LOCATION "F" - FENCE LINE ON THE WEST-SIDE

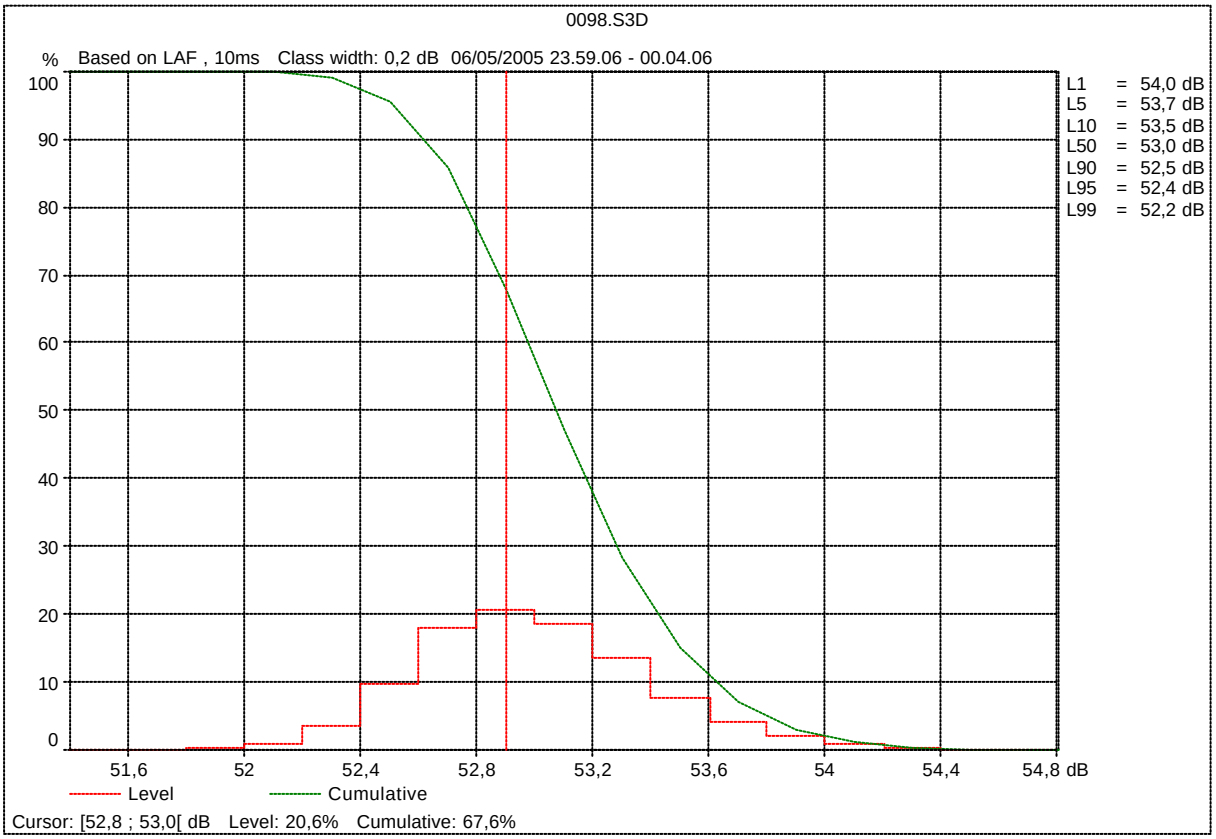
File no. 98	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**53**	51,5	54,8	89,2	0
Time	23.59.06	0.05.00						
Date	06/05/2005							



Notes:

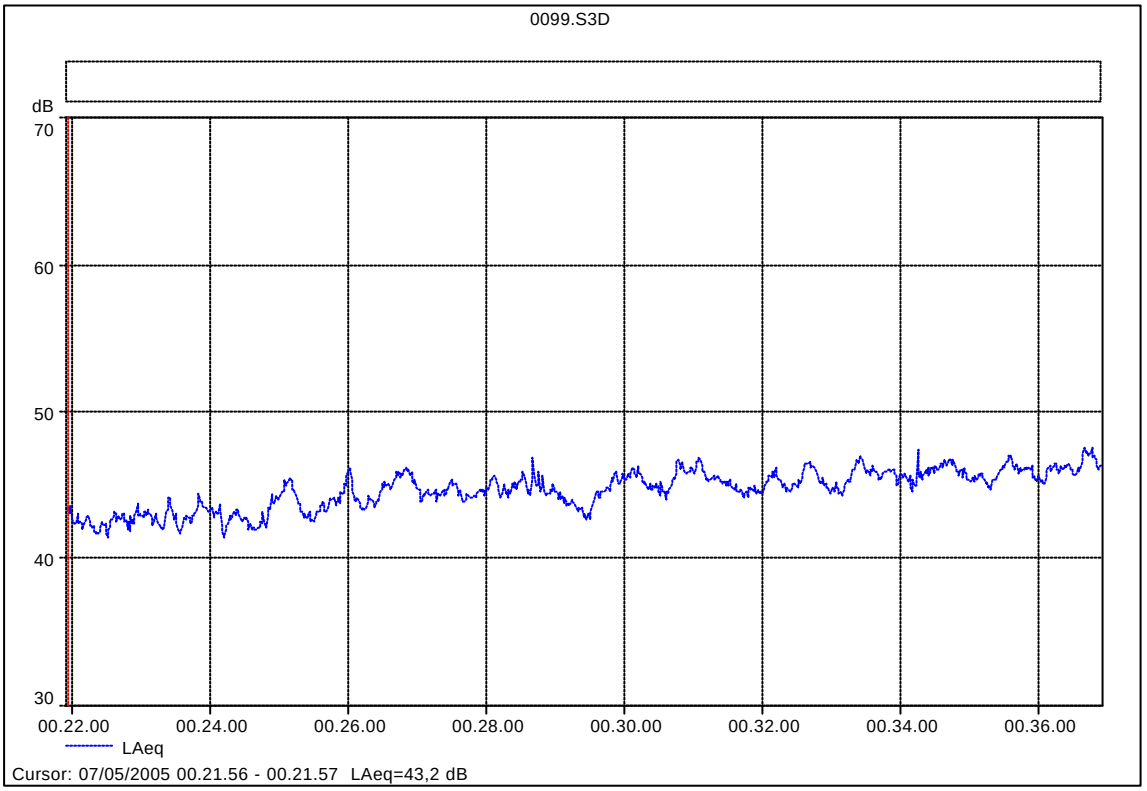
- Audible (CCPP) ACC operations


0098.S3D
dB 06/05/2005 23.59.06 - 00.04.06
80
70
60
50
40
30
20
10
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=53,0 dB LFmax=54,8 dB LFmin=51,5 dB


0098.S3D
% Based on LAF , 10ms Class width: 0,2 dB 06/05/2005 23.59.06 - 00.04.06
100
90
80
70
60
50
40
30
20
10
0
L1 = 54,0 dB
L5 = 53,7 dB
L10 = 53,5 dB
L50 = 53,0 dB
L90 = 52,5 dB
L95 = 52,4 dB
L99 = 52,2 dB
51,6
52
52,4
52,8
53,2
53,6
54
54,4
54,8 dB
Level
Cumulative
Cursor: [52,8 ; 53,0[dB Level: 20,6% Cumulative: 67,6%

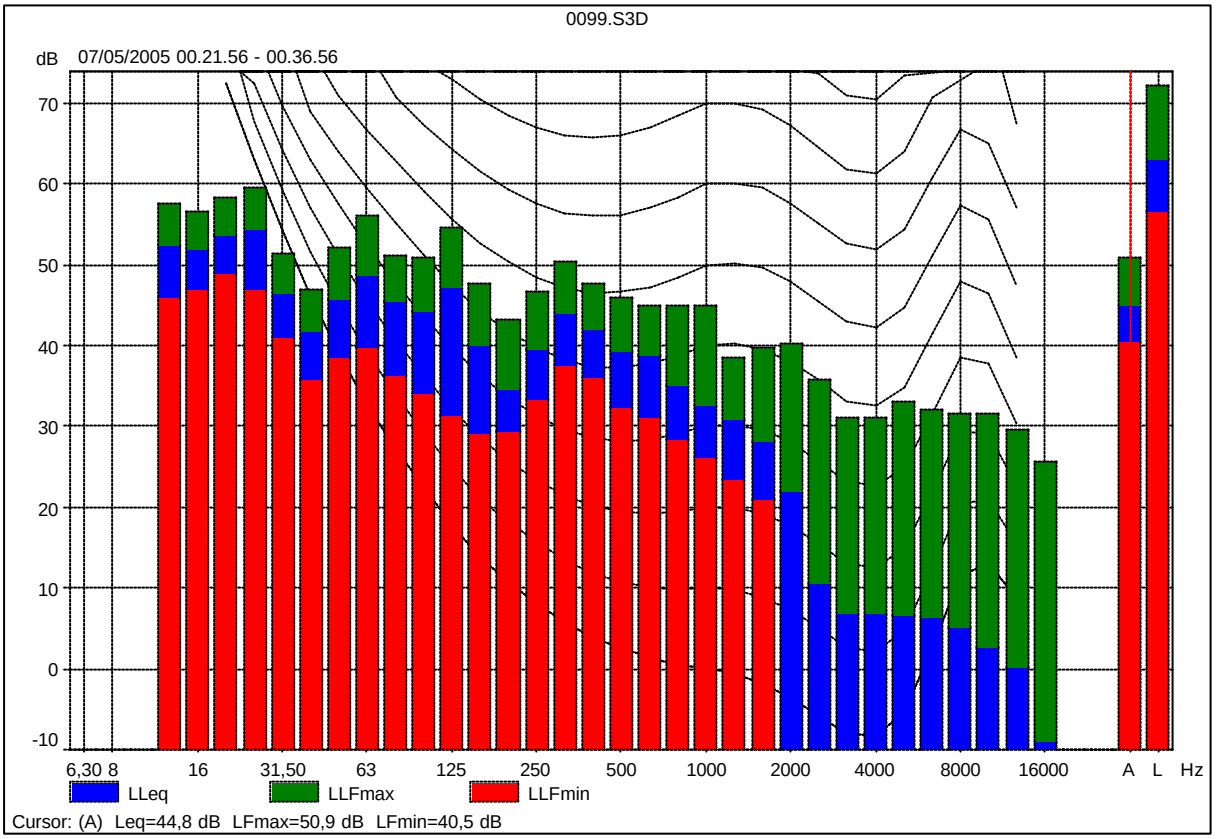
2.8 LOCATION "G" - C.NA LA ROTTA

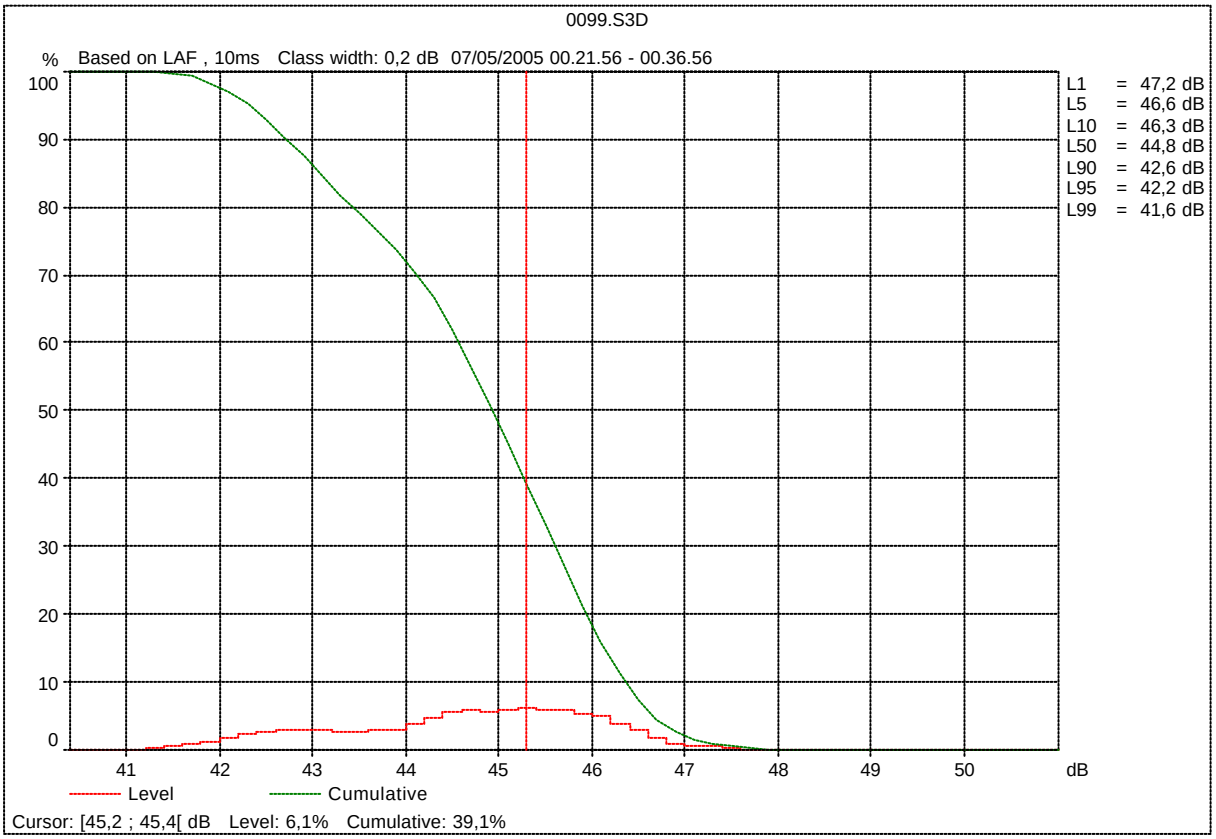
File no. 99	Start time	Elapsed time	Overload [%]	**LAeq [dB]**	LAFmin [dB]	LAFmax [dB]	LLpeak [dB]	No. of Lpeaks
Value			0	**44,8**	40,5	50,9	78,6	0
Time	0.21.56	0.15.00						
Date	07/05/2005							



Notes:

- Audible Smurfit WWT machinery operations
  (more contributive than during the day-time measure)


0099.S3D
dB 07/05/2005 00.21.56 - 00.36.56
70
60
50
40
30
20
10
0
-10
6,30 8
16
31,50
63
125
250
500
1000
2000
4000
8000
16000
A L Hz
LLeq
LLFmax
LLFmin
Cursor: (A) Leq=44,8 dB LFmax=50,9 dB LFmin=40,5 dB


0099.S3D
% Based on LAF , 10ms Class width: 0,2 dB 07/05/2005 00.21.56 - 00.36.56
100
90
80
70
60
50
40
30
20
10
0
41
42
43
44
45
46
47
48
49
50
dB
L1 = 47,2 dB
L5 = 46,6 dB
L10 = 46,3 dB
L50 = 44,8 dB
L90 = 42,6 dB
L95 = 42,2 dB
L99 = 41,6 dB
Level
Cumulative
Cursor: [45,2 ; 45,4[dB Level: 6,1% Cumulative: 39,1%

ATTACHMENT IV

INSTRUMENTATION AND DETECTED PARAMETERS

1.0 INSTRUMENTATION AND DETECTED PARAMETERS

The sound test was performed with a sound level meter Brüel & Kjær, type 2260 Investigator - serial no. 2459228, with softwares BZ 7203, BZ 7206, BZ7208, with an integrating module and with an 1/3 octave filter set in accordance with class 1 of EN 60651 and EN 60804 standards, equipped with a 1/2" pre-polarised condenser microphone Brüel & Kjær, type 4189 - serial no. 2458108.

Instrumentation was calibrated before and after each cycle of executed measurements by mean of a portable sound level calibrator Brüel & Kjær, type 4231 - serial no. 2464008, and deviations within the acceptable range (i.e. 0,5dB) were always found. The microphone was always equipped with anti-wind screen (B&K type UA 0237) and connected by the 10 m extension cable to the SLM (B&K type AO 0442) for the environmental readings.

The detected noise levels were always sound pressure levels, in particular:

L_{Aeq}	equivalent continuous sound pressure level for the duration of the measurement (i.e integration time), as defined by IEC 1672, broad-band with "A" frequency weighting;
LL_{eq}	equivalent continuous sound pressure level for the duration of the measurement, as defined by IEC 1672, octave-band without "A" frequency weighting;
$LL_{Fmax/min}$	maximum/minimum root mean square (RMS) sound pressure level detected within the measurement time with "Fast" time weighting, octave-band without "A" frequency weighting;
$L_{AFmax/min}$	maximum/minimum RMS sound pressure level detected within the measurement time with "Fast" time weighting, broad-band with "A" frequency weighting;
L_{AFn}	RMS sound pressure levels exceeded n% of the elapsed time, with "Fast" time weighting, broad-band with "A" frequency weighting. The 'Level Curve' reports on y-axis how many times the sampler collected by percentage the respective level on x-axis, the 'Cumulative Curve' reports on y-axis the fraction of measurement time by percentage corresponding to the exceeding of the respective level on x-axis;
$L_{Lpk(MaxP)}$	Maximum peak level detected during the measurement, broad-band without frequency weighting;
No. of Lpeaks	Counts the number of seconds where a specified peak level (i.e. 140,0dB) is exceeded during a measurement.

Last laboratory calibration of the sound level meter type 2260 Investigator and calibrator type 4231 was performed on November 26th and 30th, 2004 at Brüel & Kjær Denmark - recognized as calibration centre no. 307: an abstract of the relative DANAK certificates no. CA042343 and CA042404 are reported at the following point 2.0 together with the Manufacturer's certificates of conformance.

The instrumentation used for the Sound Test conforms to the DMA 16/03/1998, art. 2 and att. B.

2.0 CERTIFICATES OF CALIBRATION

Brüel & Kjær

The Calibration Laboratory
Skodsborgvej 307
DK-2850 Nærum, Denmark
Telephone: +45 7741 2000
Web: http://www.bksv.com
Fax: +45 7741 2027

DANAK
Reg.nr. 307

CERTIFICATE OF TRACEABLE CALIBRATION
No: CA042343 Page 1 of 29

CALIBRATION OF:

Sound Level Meter	2260	No: 2459228
Microphone:	4189	No: 2458108
Identification:		
Date of receipt:	24/11/2004	

CLIENT:

Foster Wheeler
Via S. Caboto 1
20094 Corsico
MI
Italy

CALIBRATION CONDITIONS:

Preconditioning:	12 hours at 23 °C		
Environment conditions:	Air temperature:	23 °C	± 3°C
	Air pressure:	101 kPa	± 3 kPa
	Relative Humidity:	50 %RH	± 25 %RH

SPECIFICATIONS:
The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC60651 and IEC 60804.

PROCEDURE:
The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System B&K 3630 with application software type 7763 and test collection 2260-4189-BZ7210-V2.0

RESULTS:

X Initial calibration — Calibration prior to repair/adjustment
Recalibration without repair/adjustment — Calibration after repair/adjustment

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of Calibration: 26/11/2004
Peter Gaardsdal
Calibration Technician

Certificate issued: 29/11/2004
Nils Johansen
Approved signatory:

The Brüel & Kjær Calibration Laboratory

Brüel & Kjær
Skodsborgvej 307
DK-2850 Nærum, Denmark
Telephone: +4577412000
Web site address:http//www.bksv.com/
Fax: +4577412027

DANAK
Reg. NR. 307

CERTIFICATE OF TRACEABLE CALIBRATION
No.: CA042404 Page 1 of 2

CALIBRATION OF:

Sound Level Calibrator 4231 Serial No.: 2464008

Identification:

Date of receipt: 24.Nov.2004

CLIENT:

Foster Wheeler
Via S. Caboto 1
20094 Corsico
MI
Italy

CALIBRATION CONDITIONS:

Preconditioning :	4 hours at 23 °C ± 3 °C		
Enviroment conditions :	Air temperature :	23 °C	± 3 °C
	Air pressure :	101.3 kPa	± 5 kPa
	Relative humidity :	50 % RH	± 25% RH

SPECIFICATIONS:

The Sound Level Calibrator has been calibrated in accordance with the requirement as specified in IEC942(1988)

PROCEDURE:

The apparatus has been calibrated in accordance with the requirements as specified by vendor, using Calibration Procedure No. P4231A03

RESULT:

[X] Initial Calibration
[ ] Calibration prior to repair/adjustment
[ ] Recalibration without repair/adjustment
[ ] Calibration after repair/adjustment

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with DANAK requirements (EA 4/02).
Results marked by asterisk (*) are outside our scope of accreditation.

Date of Calibration : 30.Nov.2004 Certificate issued: 30.Nov.2004

Mohsen S. Nejad
Calibration Technician

Approved signatory:

FOSTER WHEELER

OE NR | LOC 13 B

MANUFACTURER'S CERTIFICATE OF CONFORMANCE

We certify that Brüel & Kjær -2260--- Serial No 2459228
has been tested and passed all production tests, confirming compliance with the manufacturer's published specification at the date of the test.

The final test has been performed using calibrated equipment, traceable to National or International Standards or by ratio measurements.

Brüel & Kjær is certified under ISO 9001:2000 assuring that all calibration data for test equipment are retained on file and are available for inspection upon request.

Nærum 9. November 2004

Torben Bjørn
Vice President
Operations

Please note that this document is not a calibration certificate, for information on our calibration services please contact your nearest Brüel & Kjær Service Center.

BA 0238 - 15

WORLD HEADQUARTERS: DK-2850 Nærum · Denmark
Telephone: +45 45 80 05 00 · Fax: +45 45 80 14 05 · http://www.bksv.com · e-mail: info@bksv.dk

Brüel & Kjær

OE NR 6300628 | LOC

MANUFACTURER'S CERTIFICATE OF CONFORMANCE

We certify that Brüel & Kjær 2260-A-105 Serial No 2447011
has been tested and passed all production tests, confirming compliance with the manufacturer's published specification at the date of the test.

The final test has been performed using calibrated equipment, traceable to National or International Standards or by ratio measurements.

Brüel & Kjær is certified under ISO 9001:2000 assuring that all calibration data for test equipment are retained on file and are available for inspection upon request.

Consisting of:

2260 Serial no.: 2459228

4231 Serial no.: 2464008

Nærum 30-11-04

Torben Bjørn
Vice President
Operations

Please note that this document is not a calibration certificate, for information on our calibration services please contact your nearest Brüel & Kjær Service Center.

BA 0238 - 15

WORLD HEADQUARTERS: DK-2850 Nærum · Denmark
Telephone: +45 45 80 05 00 · Fax: +45 45 80 14 05 · http://www.bksv.com · e-mail: info@bksv.dk

Brüel & Kjær

ATTACHMENT V

DIAGRAM OF THE CCPP LOAD

The following diagram, received by the control room operator, reports on y-axis the active power output of the electrical generator in MWe vs time. The diagram refers to the day-time of May 6th, 2005 and the first hours of May 7th, 2005.