ANNEXURE S:

ISSUES TRAIL AND COMMENTS FROM I&APs

SIYAQALA (BEE) BUSINESS FORUM

SIYAQALA

P.O. Box 529
MOSSEL BAY
6500

Tel:+ 27(44) 695-1529
Fax:+ 27(44) 695-2689

No. 3 Sioux Street Voorbaai, Mossel Bay

19 September 2005

NINHAM SHAND CONSULTING SERVICES
P.O. BOX 1347
CAPE TOWN
8000

Attention: KAMEL GOVENDER OR BRETT LAWSON

SUBJECT: PROPOSED OPEN CYDE GAS TURBAINE, POWER PLANT, FUEL SUPPLY, SUB STATION & TRANSMISSION LINES: MOSSEL BAY RESPONSE FOR COMMENT BY INTERESTED AND AFFECTED PARTIES.

RECOMMENDATIONS:

1.1 On the 19th September 2005 at 10h00 at Kwanonqaba our Executive Committee Meeting took a resolution that the following recommendations (based on the reference of TCTA BERGWATER PROJECT OF R1.6 Billion Rand near Franschoek in the Western Cape) Case study May 2002 to December 2007.

1.2 Our Organization supports the (OCGT) plant investment with the view that during construction phase ESKOM must comply a skills database in the Mossel Bay area. Based on this, it must formulate a preferential employment and BEE procurement policy, known as "MOSSEL BAY FIRST" to ensure that the local historically disadvantaged communities are offered the maximum benefits from the project's implementation.

1.3 According to this policy, contractors on the ESKOM OCGT have to meet specific targets in terms of the employment and procurement, or face penalties.

1.4 To facilitate the process, ESKOM must create an employment information desk (EID) to administer the database and recruit locals.
Subsequently, the EID has also to be tasked with SMME coaching and prevenient training programmes for contractors to take full advantage of contracts.

No:		File: 400850/		
Date: 21/09/2005				
To		Sean	Act	Cl
Bill/ Off.	Initials			
1552	BL			
	KG			

1.5 That the establishment of Community liaison committee must be implemented before record of decision being approved; consisting only registered interested and affected parties; at the cost of the applicant prior to land clearing or construction commencing with Terms of Reference in the (OCGT) project Draft Scope Report

1.6 The Executive Committee agreed in principle that SALGA LED OFFICER LEARNERS IN Mossel Bay Municipality must be given exposure to project management of (OCGT) project construction phase (as they are aspirant future drivers of Mossel Bay IDZ, initiative particularly (Site establishment, Employment Information Desk, (EID), and community Communication) with reference to Government's objectives of an adaptive economy characterized by growth, employment and equity by 2014.

- Implement exposure for these aspirant Project Managers LED Learner specialist on Enterprise development and on residual element
- Implement social equity with assistance from the aspirant project Managers LED Learner specialist as they are agents of change, who can verify corporate score-card; socio economic score-card and walking the talk reports.
- All contracts should be advertised in the Local Mossel Bay newspaper, namely Mossel Bay Advertiser.

Yours truly

M. MPUMELA
(Deputy Chairperson)
Cell 076 1997 928

NINHAM SHAND
CONSULTING SERVICES

PROPOSED OPEN CYCLE GAS TURBINE POWER PLANT, FUEL SUPPLY PIPELINE, SUBSTATION & TRANSMISSION LINES: MOSSEL BAY

Response Form for comment by Interested and Affected Parties

Please provide any comments you may have regarding the proposed project and return this page to Ninham Shand via email, fax or post:

Attention: Kamal Govender or Brett Lawson
Tel No: (021) 481 2510/2505 Fax No: (021) 424 5588 Email: enviro@shands.co.za
Postal Address: P.O. Box 1347, Cape Town, 8000

Please note that your comments must reach us by **Wednesday, 28 September 2005.**

YOUR NAME: MONDE MPUMELA DEPUTY PRESIDENT
ORGANISATION (If applicable): SIYAQALA (BEE) FORUM (AFFILIATE MOSSEL BAY FORUM BUS. CHAMBERS)
POSTAL ADDRESS: P.O. BOX 2244
MOSSEL BAY CODE: 6500
PHONE NUMBER: 044 - 6951529 FAX NUMBER: 044 - 6952689

List any other Interested and Affected Parties that should be contacted (with contact details if available):

Name/ Organisation	Postal Address	Tel No.	Fax No.

PLEASE LIST ANY COMMENTS, ISSUES OR CONCERNS WHICH YOU MAY HAVE:

Gas turbine power plant & fuel supply pipeline: Our organisation unanimously took decision that the Community Liaison Committee must be established before Record of decision being approved; consisting only registered interested and affected parties; at the cost of the Applicant prior to land clearing or construction commencing with Terms of Reference suitable for all as mentioned in the Draft Scope Report. ~~Also~~ In conclusion our organisation agreed in principle that SALGA LED Learners in Mossel Bay must be exposed to project management of municipality (OCGT) project construction phase particularly (Site establishment and community communication) with reference to NATIONAL SKILLS DEVELOPMENT STRATEGY 2014 as Aspiring Project Managers in Environmental Assessment

≡ 1Δ)

Eskom

No.		File: 400850/		
Date: 29/09/2005				
To		Seen	Act	Ct
BU/ Off.	Initials			
1552	BL			

MOSSEL BAY MUNICIPALITY
MOSSELBAAI MUNISIPALITEIT
UMASIPALA MOSSEL BAYI

In antwoord verwys na nommer
In reply quote number
Xa Uphendula cinga Le Nombolo

15/4/14/15
TD/ALG/JDVE

26 September 2005

TO	WK Lugel
UNIT	
DATE	2005 -09- 29
FILE	
ACTION	

Project Manager
Mossel Bay OCGT EIA
Ninham Stand Consulting Services
P O Box 1347
CAPE TOWN
8000

Dear Sir

MOSSEL BAY OCT. EIA: DRAFT ENVIRONMENTAL IMPACT REPORT

Your letter dated 21 September 2005 in above regard refers.

I have studied your report and have only two concerns. The first concern is the availability of water. In light of the Department of Water Affairs letter, Annexure "P" the statement in Annexure "E", Visual Impact Assessment, that Petro SA has sufficient excess capacity in its water supply is questionable. Reference is also made that the Wet NO x abatement process will use 87 000 kl per year of water on page 31 of your report while in Annexure "E" page 7, the volume is stated as 547 000kl per year.

The volume of water necessary for operating a dry NOx abatement process for washing the blades, fire protection, etc, does not come out clearly in the report.

Secondly, the servitude width in respect of the fuel pipeline is not addressed. If I understand the report correctly, the fuel line will only be on Petro SA property. If it however crosses any other privately owned land, the servitude to be registered must be wide enough to include the safety zone around the fuel pipeline.

Yours faithfully

JD VAN EEDEN Pr Eng
DIRECTOR TECHNICAL SERVICES

ayb/environ impact report OCT EIA

Marshstraat 101
Privaatsak X29
Mosselbaai
6500

101 Marsh Street
Private Bag X29
Mossel Bay
6500

101 Marsh Sitalata
Ingxowa Yeposi Ngu X29
Mossel Bay
6500

Tel. Infoconfono: +27 (44) 606 5000
Fax/Faksi: +27 (44) 606 5062
e-mail: admin@masselbaymun.co.za
web: www.masselbaymun.co.za

MOSSEL BAY 1488 MOSSELBAAI

NINHAM SHAND
RAADGEWENDE DIENSTE

VOORGESTELDE OOPSIKLUSGASTURBIENE KRAGSTASIE, BRANDSTOFTOEVOERPYPLYN, SUBSTASIE & TRANSMISSIELYNE: MOSSELBAAI

Terugvoer van Belanghebbende en Affekteerde Partye

Vir enige terugvoer aangaande die projek, voltooi asseblief bygaande bladsy en stuur aan Ninham Shand via e-pos, faks of per gewone pos:

Vir Aandag: Kamal Govender or Brett Lawson
Tel Nr: (021) 481 2510/2505 Faks Nr: (021) 424 5588 E-pos: enviro@shands.co.za
Posadres: PosBus 1347, Kaapstad, 8000

Let daarop dat laaste dag vir terugvoer is **Woensdag, 28 September 2005.**

NAAM: LESTER JANSEN ; CHAIRPERSON: CHAMSA LOCAL (MBFBC) SECR. GENERAL - SIYAQALA (BEE) FORUM
ORGANISASIE (Waar van toepassing):
POSADRES: SIYAQALA (BEE) BUSINESS FORUM
P.O. BOX 529 MOSSEL BAY KODE: 6500
FOONNOMMER: 044 - 6951529 FAKSNOMMER: 044 - 6952689
CELL: 073 6859504

Lys enige ander belanghebbendes en geaffekteerde partye wat na u mening gekontak moet word (verskaf kontak besonderhede waar moontlik):

Naam/ Organisasie	Posadres	Tel Nr.	Faks Nr.

LYS ENIGE KOMMENTAAR, VOORBEHOUDE OF BESWARE:

Gasturbiene kragstasie & brandstoftoevoerpyplyn: OUR ORGANIZATION ARE TOTALLY BEHIND AND FOR THIS PROJECT REASONS BEING;
(i) IT WILL CREATE LONG-TERM FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH TO OUR TOWN.
(ii) IT WILL POSSITIVELY CONTRIBUTE TO THE ALLEVIATION OF
Transmissielyne & substasie POVERTY AND CRIME IN MOSSEL BAY.
(iii) IT WILL CREATE OPPERTUNITY FOR COMMUNITY LONG TERM SUSTAINABLE PROJECTS AND CONTRIBUTE TO CORPORATE SOCIAL INVESTMENT.

Dankie vir u belangstelling

Eskom

NINHAM SHAND
CONSULTING SERVICES

PROPOSED OPEN CYCLE GAS TURBINE POWER PLANT, FUEL SUPPLY PIPELINE, SUBSTATION & TRANSMISSION LINES: MOSSEL BAY

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Tel No: (021) 481 2510/2505 Fax No: (021) 424 5588 Email: enviro@shands.co.za
Postal Address: P.O. Box 1347, Cape Town, 8000

Please note that your comments must reach us by **Wednesday, 28 September 2005.**

YOUR NAME: .....

ORGANISATION (If applicable): .....

POSTAL ADDRESS: .....

..... CODE: .....

PHONE NUMBER: ..... FAX NUMBER: .....

List any other Interested and Affected Parties that should be contacted (with contact details if available):

Name/ Organisation	Postal Address	Tel No.	Fax No.

PLEASE LIST ANY COMMENTS, ISSUES OR CONCERNS WHICH YOU MAY HAVE:

Gas turbine power plant & fuel supply pipeline: .....

.....

.....

.....

Transmission lines & substation .....

.....

.....

.....

.....

Thank you for your interest

Eskom

NINHAM SHAND
RAADGEWENDE DIENSTE

VOORGESTELDE OOPSIKLUSGASTURBIENE KRAGSTASIE, BRANDSTOFTOEVOERPYPLYN, SUBSTASIE & TRANSMISSIELYNE: MOSSELBAAI

Terugvoer van Belanghebbende en Affekteerde Partye

Vir enige terugvoer aangaande die projek, voltooi asseblief bygaande bladsy en stuur aan Ninham Shand via e-pos, faks of per gewone pos:

Vir Aandag: Kamal Govender or Brett Lawson
Tel Nr: (021) 481 2510/2505 Faks Nr: (021) 424 5588 E-pos: enviro@shands.co.za
Posadres: PosBus 1347, Kaapstad, 8000

Let daarop dat laaste dag vir terugvoer is **Woensdag, 28 September 2005.**

NAAM: LESTER JANSEN. CHAIRPERSON : CHAMSA LOCAL (MFBC)
SEC. GENERAL : SIYABALA (BEE) BUSINESS FORUM
ORGANISASIE (Waar van toepassing):
POSADRES: SIYABALA (BEE) BUSINESS FORUM
P.O. BOX 529 MOSSEL BAY KODE: 6500
FOONNOMMER: 073 685 9504 FAKSNOMMER: 044 - ~~685 9504~~
044 - 695 1529 695 2689

Lys enige ander belanghebbendes en geaffekteerde partye wat na u mening gekontak moet word (verskaf kontak besonderhede waar moontlik):

Naam/ Organisasie	Posadres	Tel Nr.	Faks Nr.

LYS ENIGE KOMMENTAAR, VOORBEHOUDE OF BESWARE:
Gasturbiene kragstasie & brandstoftoevoerpyplyn: Our Organization Are
Much Please To Eskoms Commitment To :
1. (BBBEE) Broad Bases Black Economic Empowerment
2. Construction Sector Transformations Charter.
3. Construction Industry Development Board Act.
Transmissielyne & substasie: Petroleum Resources Development Act
5. Petroleum Liquid Fuels Charter.
And Commitment To Corporate Social
Investment.
6. Public Participation Process Were Transparent.

Dankie vir u belangstelling

Eskom

NINHAM SHAND
CONSULTING SERVICES

PROPOSED OPEN CYCLE GAS TURBINE POWER PLANT, FUEL SUPPLY PIPELINE, SUBSTATION & TRANSMISSION LINES: MOSSEL BAY

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Postal Address: P.O. Box 1347, Cape Town, 8000

Please note that your comments must reach us by **Wednesday, 28 September 2005.**

YOUR NAME:.....

ORGANISATION (If applicable):.....

POSTAL ADDRESS:.....

.....CODE:.....

PHONE NUMBER: .....FAX NUMBER:.....

List any other Interested and Affected Parties that should be contacted (with contact details if available):

Name/ Organisation	Postal Address	Tel No.	Fax No.

PLEASE LIST ANY COMMENTS, ISSUES OR CONCERNS WHICH YOU MAY HAVE:

Gas turbine power plant & fuel supply pipeline:.....

.....

.....

.....

Transmission lines & substation.....

.....

.....

.....

.....

Thank you for your interest

Eskom

Kamal Govender - RE: Mossel Bay OCGT EIA: Draft Environmental Impact Report

From: "Justice Sithole (SJ)" <SitholJ@telkom.co.za>
To: "Kamal Govender" <Kamal.Govender@shands.co.za>
Date: 05/10/2005 10:48 AM
Subject: RE: Mossel Bay OCGT EIA: Draft Environmental Impact Report

Hi Kamal,

In an effort not to delay the finalisation and the release of the above mentioned document, Telkom S.A as interested/affected party needs to be included in the draft in case there are services which may or may not be affected.

Before the project can go ahead we need an application with a covering letter, and 3 copies of plans as there may be recoverable costs of Telkom S.A services affected.

Kind regards
Justice

> -----Original Message-----
> **From:** Kamal Govender [mailto:Kamal.Govender@shands.co.za]
> **Sent:** 03 October 2005 15:19
> **To:** Justice Sithole (SJ)
> **Subject:** Mossel Bay OCGT EIA: Draft Environmental Impact Report
>
> Dear Justice
>
> I have just left a message on your cell phone. I wasn't able to e-mail you the draft environmental impact report as it was too large to e-mail. It is however available on the eskom website, www.eskom.co.za/eia, and at the Mossel Bay & D' Almeida public libraries.
>
> Regards
> Kamal
>
> ---
> Kamal Govender
> Environmental Practitioner
>
> Ninham Shand Consulting Services
> P O Box 1347, Cape Town, 8000
> Tel: 021 481 2510
> Fax: 021 424 5588

From: "Roderick Beckmann" <BeckmaRM@eskom.co.za>
To: <Brett.Lawson@shands.co.za>, <Kamal.Govender@shands.co.za>
Date: 05/10/2005 03:02:46 PM
Subject: Fwd: Attention: Mr Govender Comments on Proposed OCGT plantin Mosselbay.

Roderick Beckmann
Client Office Manager - OCGT
Divisional Client Office
P O Box 193
Edgemead
7407
South Africa

Tel: +27 21 5587267
Fax: +27 21 5582997
Cell: +27 828538576

E-mail: Roderick.Beckmann@Eskom.co.za

>>> "Steyn CAREL" <CAREL.Steyn@petrosa.co.za> 2005/09/23 05:55:54 PM >>>

Dear Mr. Kamal

On behalf of PetroSA, I would hereby like to make the following comments on the proposed OCGT plant and the recommendations contained in the Draft EIR.

1. Access Servitude
PetroSA strongly prefers Alternative 3 as an access route to the Eskom site. (i.e. direct access from the N2)
This preference is motivated by the following:
1.1 Eskom and PetroSA will operate as separate entities. The PetroSA access route, security systems and associated roads are designed to provide access to a number of individual PetroSA facilities and it will not be possible to segregate the road system to provide for Eskom-specific access control. As a National Keypoint, we have to maintain very strict security control on our site and these controls will cause a bottleneck during the construction of the critical, fast-track Eskom project. Congestion is expected, especially during our shut-down periods. Significant, unnecessary costs will be incurred.
1.2 The existing roads will not be able to handle the heavy loads during the project phase and a major upgrade of the road will have to be done by Eskom. This will further disrupt our operations.

2. Plant Siting
A study was done by PetroSA in conjunction with Eskom, to define the preferred plant site. Relocating the identified OCGT site will not be in PetroSA's best interests as this will spoil our land for future developments.

This area has been set aside for future landfill purposes and it has suitable soil structures for this purpose. The relocation of the OCGT site will severely limit our ability to provide for our long term future as the controlled disposal of industrial and hazardous wastes is a critical part of our operation. As the area is also used for regional domestic waste disposal, the relocation of the site will prevent us from assisting the regional municipalities in this regard.

We trust that you will give these issues due consideration.
Yours truly,
Carel Steyn
Manager: Optimisation & Development

ISSUES TRAIL: Mossel Bay OCGT EIA Final Environmental Impact Report, October 2005

No	Individual	Organisation	Question, Issue or Concern	Reference	Action/ Response
1	Lester Jansen	Siyaqala (BEE) Business Forum	The project will create long-term foreign direct investment and economic growth to the town	3rd public meeting~15 September 2005	Acknowledged. This has been confirmed by the macro-economic sudy undertaken by Eskom.
			The project will contribute positively to the alleviation of poverty and crime in Mossel Bay	3rd public meeting~15 September 2005	Noted.
			It will create opportunity for community long term sustainable projects and contribute to corporate social investment.	3rd public meeting~15 September 2005	Noted.
			They are pleased with Eskom's commitments to (1) broad based black economic empowerment; (2) construction sector transformation charter; (3) construction industry development board act; (4) petroleum resources development act; (5) petroleum liquid fuels charter; and (6) to corporate social investment.	3rd public meeting~15 September 2005	Noted.
			The public participation process was transparent	3rd public meeting~15 September 2005	Noted.

2	A Swanepoel	Dana Bay Residents Association	Concerned about air quality, noise impacts, impacts on lifestyle and property prices	3rd public meeting~15 September 2005	The results of the specialist air quality study indicate that emissions would be below the guidelines set by the Department of Environmental Affairs and Tourism. There would be no health implications for nearby residents as a result of emissions from the proposed power plant. The plant would operate for roughly 438 hours per year, and consequently noise would not be continuous. Only in emergency situations would the plant operate for any longer. The plant would be designed with specific noise mitigation measures in place. With respect to property prices, it must be noted that the plant would be located within an industrially zoned area.
3	G J Oberholster	Dana Bay Residents Association	Concerned about air quality and asked if emissions would be monitored during operation of the plant	3rd public meeting~15 September 2005	Emissions monitoring would be part of the standard operating procedure and operational Environmental Management Plan of the plant and a requirement of the permit from the Department of Environmental Affairs and Tourism as set by the Chief Air Pollution Control Officer.
			Asked how long after the RoD was received would construction begin	3rd public meeting~15 September 2005	Construction could only begin once a positive RoD is received and after the 30 day appeal period has passed. Eskom is hoping to begin construction in January 2006.
			Wet NOx abatement measures should be considered in the EIR as a precautionary measure	3rd public meeting~15 September 2005	Wet NOx abatement measures were considered but was eliminated as an alternative because the air quality study has shown that air quality guidelines would be met without the need to impement wet NOx abatement measures. The type of turbine technology selected makes the need for wet NOx abatement redundant.
4	B Maree	Dana Bay Residents Association	Asked if the proposed power plant was part of a NEPAD plan to export electricity out of South Africa	3rd public meeting~15 September 2005	The electricity generated is not for export but would be for South Africa and the Western Cape in particular, to meet the increasing demand for energy.

			Asked if there was any possibility of moving the plant to Proteus substation	3rd public meeting~15 September 2005	Proteus was screened out as an alternative during Eskom's site screening process. The lack of suitable terrain at Proteus makes construction economically and technically less feasible. In addition, Proteus is extremely sensitive from a biophysical point of view.
5	M Vlok	Dana Bay Residents Association	Asked about the long term supply of fuel from PetroSA	3rd public meeting~15 September 2005	The minister of Minerals and Energy has indicated a strong preference to keep PetroSA operational into the future. However, even if PetroSA was to shut down, the infrastructure would remain, enabling the continuous supply of fuel to the proposed power plant.
6	Monde Mpumela	Siyaqala (BEE) Business Forum	Supports the project on condition that Eskom compiles a skills database in the Mossel Bay area and then formulates a preferential employment and BEE procurement policy, known as "Mossel Bay First", to offer maximum benefits to local historically disadvantaged communities	Fax ~ 21 September 2005	Eskom is in the process of setting up a commercial business forum to allow local businesses to register themselves on the Eskom vendor list. A requirement of registration will be compliance with Eskom's BEE policies.
			In terms of the policy, contractors must meet specific targets or face penalties	Fax ~ 21 September 2005	Eskom requires that their contractors meet local labour targets. The targets set depend on available and competent expertise, and would be monitored by Eskom.
			To facilitate this process, Eskom must create an employment information desk to administer the database and recruit locals	Fax ~ 21 September 2005	The project management office would be responsible for liaison with the local community. The role of this office would be to match local skill with a contractor's need. The vendor list, described above, is managed by Eskom's commercial departments.
			The employment information desk must also be tasked with SMME coaching and training programmes for contractors to take full advantage of contracts	Fax ~ 21 September 2005	The commercial business forum will aid businesses in understanding the registration requirements and assist with the completion of the relevant documentation for inclusion on the Eskom vendor list. Support will be provided in terms of understanding the contractual requirements. However, training to undertake specific tasks required to execute the contracts will not be provided by Eskom.

			A community liaison committee must be implemented before a record of decision is given. The committee would comprise only registered I&APs and be at the cost of the applicant. The committee must be established prior to land clearing or construction commencing with terms of reference as mentioned in the OCGT draft scope report	Fax ~ 21 September 2005	As described above, the project management office will be responsible for interactions with the local communities, once a positive Record of Decision has been received. The composition and functioning of any forums that are established will be formulated before construction begins. These would be based on the I&AP database and include appropriate terms of reference.
			SALGA LED OFFICER LEARNERS in Mossel Bay Municipality must be given exposure to project management of the project construction phase (as they are the aspirant future drivers of Mossel Bay IDZ initiative) particularly site establishment, employment information desk, and community communication, with reference to the national skills development strategy. Expose aspirant Project Managers LED Learner specialists to Enterprise development and residual element. Implement social equity with assistance from aspirant Project Managers LED Learner card; socio-economic score card and walking the talk reports	Fax ~ 21 September 2005	The request is noted and a suitable motivation may be submitted to Eskom Furthermore, it should be noted that Eskom has a strong commitment to the national skills development strategy, of which such an iniative would form a part.
			All contracts should be advertised in the Mossel Bay Advertiser	Fax ~ 21 September 2005	All contracts will be advertised in terms of Eskom's commercial strategy and advertising policies. Appropriate contracts will be advertised in the Mossel Bay Advertiser.

7	J D van Eeden	Director: Technical Services, Mossel Bay Municipality	Concern regarding the availability of water and questions whether PetroSA has sufficient excess capacity in its water supply	Letter ~ 26 September 2005	The concern is noted. However, based on the air quality study, a large volume of water would not be required. Approximately 30 kl of potable water (an average middle-income household's use) would be required per month for blade washing, domestic use, etc. Water would also be required for first fills on the generator and turbine cooling system and fire water systems. Anticipated water requirements are not considered significant. Potable water would be acquired from Mossel Bay Municipality.
			There is a dicrepancy as to how much water would actually be used for the Wet NOx abatement process, 87 000 kl or 547 000 kl per year	Letter ~ 26 September 2005	Initial estimations of water use, with wet NOx abatement measures, pegged the required volume at 547 000 kl per year. However, based on further work and more informed calculations this was revised to 87 000 kl per year. The figure of 547 000 kl was amended in the body of the draft report but not in Annexure E, the visual study. It must be noted that wet NOx abatement measures will not be required, and as such, large volumes of water would not be required. The amount of potable water required by the plant would be approximately 30 kl/ month.
			The volume of water necessary for the dry NOx abatement process is not presented in the report	Letter ~ 26 September 2005	Water is not required specifically for the dry NOx abatement process. Overall water usage of the plant would be approximately 30 kl/ month.
			The servitude width of the fuel supply pipeline is not addressed. If the pipeline crosses privately owned land the servitude to be registered must be wide enough to include the safety zone around the pipeline	Letter ~ 26 September 2005	Comment noted. However, the pipeline servitude, approximately 10 m, would lie wholly within PetroSA-owned land.
8	Justice Sithole	Telkom	Before the project can go ahead, Telkom needs an application with a covering letter and three copies of plans as there may be recoverable costs associated with affected Telkom services.	e-mail ~ 5 October 2005	Noted. Eskom will inform Telkom of their construction plans prior to construction beginning.

9	Carel Steyn	PetroSA	PetroSA prefers access road Alternative 3 as it would mean that Eskom remains separate from PetroSA's operations and would not have to comply with their security measures. In addition, the existing access road would have to be upgraded to accommodate the project construction phase.	e-mail ~ 23 September 2005	The concern is noted. However, from a visual, botanical and traffic impact perspective, Alternatives 1 or 2 are preferred. Once the plant is in operation, security shouldn't be a significant issue as the plant would employ only about 10 people. Eskom will upgrade the road as required.
			Relocating the site does not suit PetroSA's best interests as the area south and east of the proposed site is set aside for future landfill purposes, including the controlled disposal of industrial and hazardous waste.	e-mail ~ 23 September 2005	Noted. One of the mitigation measures, with respect to noise impacts, is to move the plant as far to the south and east as is possible. It is not intended to impinge on PetroSA's future activities.

ANNEXURE T:

SIEMENS NOISE GUARANTEES AND CALCULATIONS

SIEMENS

Ref. (Department/Year/Serial No.)

Report PG W7P/2005/034

Subject/Title
Noise Protection Concept

Place	Date
Erlangen	02. Sept. 2005

Author(s)	Department	Tel.	Signature
Purwins	W7PM	7522	sgnd. Purwins

Project
OCGT Eskom – Mossel Bay
[SSC5 – 2000E]

Protection Class
For internal use only

Export Classification*)

Signature for Release by Dept. Concerned (for Contents, Handling, Distribution)		Signature for External Release by Sales & Marketing Dept. (Not Required for Approval Documents)
sgnd Ennes	sgnd. Gärtner	sgnd. Roehrdanz
AL		ECCN: sgnd.

Proj.-Code	UA or DCC	Contents Code	Doc. Ident. No.
RSA801	BN00	0972	7 180 187

Summary*) Pages of Text: 33 Appendices: -

A noise protection concept is drawn up for the planned OCGT Eskom MOSSEL BAY (open cycle gas turbine power plant) to meet the general noise limits described under chapter 4 of this report. The power plant consist of 3 gas turbine units [Typ SGT5-2000E] and the supporting systems. Supporting systems of the gas turbine power plant are the gas turbine compressor air intake systems, gas turbine exhaust systems, transformers, lube oil coolers, forced cooling water coolers a. s. o.. For buildings and installations which are in the clients scope of supply like control room building 00UCA/UBA, fuel oil handling systems (UEL) a. s. o. permissible individual noise limits will be recommended.

On the assumption that the individual noise limits will be not exceeded to following essential noise requirements will be met for the Siemens scope of supply:

Near Field Sound Levels

Outdoor Installations (Noise Local to Plant)

- **Maximum** A-weighted sound pressure level (L_{EQ}) of **85 dB(A)** measured at a distance of ≥1 m from the outdoor installations and their attenuation devices respectively and at a height of 1.5 m above ground level/walkway level.

Far Field Sound Levels

Continuous Noise Emissions

The following sound pressure levels will not be exceeded in the far field, measured at a distance of 1100 m from the outermost point of the plant installations:

- Night-time: L_{EQ} **≤ 45 dB(A)**
- Daytime: L_{EQ} **≤ 55 dB(A)**

The above mentioned near field and far field sound levels will be guaranteed for steady-state base load operation of the power station.

*) In Technical Reports add key words (max. 12) at the end of the Summary and enter Export Classification

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Content

1 Introduction and Task Description

A noise protection concept is drawn up for the planned OCGT Eskom MOSSEL BAY (open cycle gas turbine power plant) to meet the general noise limits described under chapter 4 of this report. The power plant consist of 3 gas turbine units [Typ SGT5-2000E] and the supporting systems. Supporting systems of the gas turbine power plant are the gas turbine compressor air intake systems, gas turbine exhaust systems, transformers, lube oil coolers, forced cooling water coolers a. s. o.. For buildings and installations which are in the clients scope of supply like control room building 00UCA/UBA, fuel oil handling systems (UEL) a. s. o. permissible individual noise limits will be recommended.

Acoustic compliance testing will be conducted confirming “Siemens Sound Test Procedures Principle Document” and ISO 6190. The Siemens procedure generally conforms to recognized industry standards such as ISO 6190.

The objective of the noise protection concept is to determine the noise limits for relevant machines and components to meet the noise requirements described in chapter 4. If it is necessary noise control installations are recommended to fulfill the individual noise limits. The noise protection concept comprises:

- Individual acoustic requirements specified for noise relevant buildings, machines and components, which have to be guaranteed by the responsible contractors / suppliers.

- Recommendation and description of sound protection measures to provide for noise relevant machines, components and buildings to meet the individual noise requirements respectively the general noise specifications.

The recommended noise control installations are not binding for execution of the “OCGT Eskom MOSSEL BAY *[SSC5 – 2000E]”,* but each supplier has to guarantee the individual noise limits. The final design of the individual noise control installations shall be agreed with Siemens W7PM Acoustic.

2 Terminology, Symbols and Definitions

Acoustic terms are explained in [8], [9], [10], [11], [12], [13], [14] [15] and [16]. The following symbols are used in this work report:

L_{WA} is the sound power level in dB(A), re 10^{-12} W

L_{pA} is the sound pressure level in dB(A), re $2*10^{-5}$ N/m²

$L_{pA\ max}$ is the maximum sound pressure level in dB(A) (re $2*10^{-5}$ N/m²), measured at 1 m distance from outdoor installations and their attenuation devices respectively and at a height of 1,5 m above ground/walkway level.

L'_{pA} is the surface sound pressure level in dB(A)

L_{EQ} is the equivalent continuous sound pressure level in dB(A)

R'_{W} is the weighted apparent sound reduction index in dB, similar to the Sound Transmission Class STC

DE is the insertion loss value in dB

(Further symbols are defined in the report.)

3 Documents for the Noise Protection Concept

The noise protection concept is based on the following documents and guidelines:

[1] Noise specification “D4 – Noise Level Guarantees (Applicable to both sites)”

[2] Siemens offer Section 1.2.1 “Performance Guarantees and Performance Tests”

[3] Siemens offer Section 1.6.3 “Noise Protection”

[4] Sound emission data of the gas turbine, model SGT5-2000E (V94.2), provided by responsible Siemens department

[5] General layout plan of the OCGT power plant “Atlantis”]

[6] General arrangement drawings of the OCGT power plant “Atlantis”

[7] Results of Siemens PG noise measurement tests at comparable turbine power stations

[8] ISO 140-4, 1998-08-15
Acoustics – Measurements of sound insulation in buildings and of building elements – Part 4: Field measurements of airborne sound insulation between rooms

[9] ISO 717-1, 1996-12-15
Acoustics- Rating of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation

[10] ISO 3740, 2000-11-01
Acoustics - Determination of sound power levels of noise sources -
Guidelines for the use of basic standards

[11] ISO 3744, 1994; DIN EN ISO 3744, Nov. 1995
Acoustics - Determination of sound power levels of noise sources - Engineering method in an essentially free field over a reflecting plane

[12] ISO 3746, 1995; DIN EN ISO 3746, Dec. 1995
Acoustics - Determination of sound power levels of noise sources - Survey method

[13] ISO 6190, 1988
Acoustics- Measurement of sound pressure levels of gas turbine installations for evaluating environmental noise – survey method

[14] ISO 9613-2, 1996; DIN EN ISO 9613, Dec. 1996
Acoustics – Attenuation of sound during propagation outdoors
Part 2: General method of calculation

[15] VDI 2081 – Blatt 1; Juli 2001
Geräuscherzeugung und Lärmminderung in Raumlufttechnischen Anlagen
(Noise generation and noise reduction in air-conditioning systems)

[16] VDI 2571, August 1976
Schallabstrahlung von Industriebauten
(Sound radiation from industrial buildings)

[17] VDI 2720 - Blatt 1, März 1997
Schallschutz durch Abschirmung im Freien
(Noise control by barriers outdoors)

[18] VDI 3733, Dezember 1992
Geräusche bei Rohrleitungen
(Noise at Pipes)

4 General Acoustic Requirements

The general noise requirements for the OCGT power plant MOSSEL BAY are described in the contract documents chapter 4 [1]. The power plant will be acoustically designed so that the following general noise limits will be met:

4.1 Guarantee Conditions

The sound levels guaranteed below, using an acoustical test procedure and measurement method to be prepared by Siemens and based upon the Siemens "SOUND TEST PROCEDURE PRINCIPLES" (see corresponding chapter), are valid for steady-state base load operation of the power plant and excepted for the following abnormal transients:

- Construction and installation of the power plant
- Commissioning of the power plant

Excluded from noise guarantees (near field and far field) are furthermore the noise emitted by facilities outside the Contracting Siemens scope, noise contribution from any industry or power equipment in the vicinity.

L_{EQ} is the equivalent continuous sound pressure level of a steady state sound that has the same sound energy as that contained in the actual time-varying sound being measured over a specific time, re $2*10^{-5}$ Pa.

4.2 Near Field Sound Levels

Outdoor Installations (Noise Local to the Plant)

The Contractor guarantees that the maximum A-weighted sound pressure level (L_{EQ}) measured at a distance of $\geq$1 m from the outdoor installations and their attenuation devices respectively and at a height of 1.5 m above ground level/walkway level will not exceed 85 dB(A).

4.3 Far field Sound Levels (Continuous Noise Emissions)

The Contractor guarantees that the sound pressure level (L_{EQ}) at a distance of 1100 m from the outermost point of the plant installations will not exceed 55 dB(A) during the daytime and 45 dB(A) during the night-time.

4.4 Infrequent Noise Sources

The Contractor guarantees that the noise emissions from the gas turbine plant, when infrequent noise sources are activated, will not exceed the emissions level guaranteed in (4.3) above by more than 4 dB(A). Such infrequent noise sources would be activated on less than 20 occasions each year and for a period not exceeding 30 minutes for each event.

4.5 General Remarks

Corresponding to the aforementioned general noise specifications, acoustical design concepts have been developed and noise limits have been established for the individual buildings, machines and components of the Power Plant, which result in an acoustical design which will meet the requirements.

Each contractor/supplier is free to design his own noise protection measures, presupposed that the individual noise limits will be met.

In the event the equipment supplier elects to take exception to any portion of the specified and or recommended acoustic performance, a list of all exceptions, as well as the alternative offerings, shall be provided by the equipment supplier in writing to SIEMENS. In the event that no written exceptions are taken to the acoustic requirements, it will be assumed that the equipment supplier will provide equipment that is fully compliant with the acoustic performance described in this report.

The acoustic design shall be submitted to SIEMENS for review, and the component shall not be fabricated until SIEMENS has indicated approval in writing of the proposed design. Calculations and/or test data from similar or existing units may be submitted for approval. All subsequent units that are duplicates of a previously accepted acoustical design do not require re-approval. The design information only needs to be submitted for the first unit. Approval by SIEMENS, however, shall not relieve the equipment supplier from meeting the acoustical requirements of the first unit or any subsequent units.

Acoustic compliance testing shall be performed as necessary by SIEMENS personnel, qualified by training and experience (acoustic engineering group). The sound test procedure to be used shall be mutually agreeable to the equipment supplier and to SIEMENS and shall generally conform to the requirements of recognized industry standards such as ANSI, ISO and DIN.

5 Specific Noise Requirements and Sound Protection Measures

5.1 Components and Equipment Installed Inside Buildings

All the machines and components installed within buildings will be acoustically designed to meet the spatially averaged sound pressure levels if required. In the following chapters the individual in-house noise requirements/limits will be specified for all acoustic relevant machines/components and equipment installed inside buildings.

5.1.1 Components within Gas Turbine Packages (11/12/13UMB)

5.1.1.1 Gas Turbines [SGT5-2000E]

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA})	Recommended noise attenuation measure
Gas turbine casing [SGT5-2000E]	L'_P = 85 dB(A) L_w = 112 dB(A)	Gas turbines with standard design, no additional sound protection measures required.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively). Sound levels are valid per component, if not indicated otherwise.

The following frequency-dependent sound power levels will be emitted from the gas turbine casing with standard design:

F_{oct}	32	63	125	250	500	1000	2000	4000	8000	Hz	Overall	
L_W	114	112	113	112	105	105	104	104	100	dB	112	dB(A)
Remark: The expected uncertainty is ± 3dB for all octave band levels and for the A-weighted overall sound power level												
Legend: „F_{oct} “ are the octave band centre frequencies. „L_W“ are the octave band sound power levels emitted from the gas turbine casing, re 10^{-12} W.												

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.1.1.2 Generator Casings [SGen5-1000A]

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA})	Recommended noise attenuation measure
Generator casing [SGen5-1000A (TLRI 115/36 DTC)]	L'_P = 90 dB(A) + 2dB L_w = 112 dB(A)	Generator with standard design, no additional sound protection measures required.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively). Sound levels are valid per component, if not indicated otherwise.

The following expected frequency-dependent sound power levels will be emitted from the generator casing:

F_{oct}	32	63	125	250	500	1000	2000	4000	8000	Hz	Overall	
L_W	110	116	117	111	106	106	105	102	95	dB	112	dB(A)

Legend:

„F_{oct} “ are the octave band centre frequencies.

„L_W“ are the octave band sound power levels emitted from the generator casing, re 10^{-12} W.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.1.1.3 Gas Turbine Compressor Air Intake Ducts [MBL-Systems]

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA})	Recommended noise attenuation measure
Compressor air intake duct located within gas turbine package	$L_W \leq 98$ dB(A)	6mm thick steel sheet glued together with 2mm thick steel sheet, 3 mm adhesive layer between them, 120 mm thick mats of mineral wool (density > 100 kg/m³), 2 mm thick steel sheet, inside with an elastic layer

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively). Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

The following frequency-dependent sound power levels, expected at the compressor air intake, shall be used to design the wall design for the compressor air intake duct:

F_{oct}	32	63	125	250	500	1000	2000	4000	8000	Hz	Overall	
L_W	121	118	119	121	128	141	148	141	132	dB	151	dB(A)
Remark: The expected uncertainty is +3dB / -5dB for the 2kHz and ± 5dB for all other octave band levels and ± 3dB for the A-weighted overall sound power level												
Legend: „F_{oct} “ are the octave band centre frequencies. „L_W“ are the octave band sound power levels expected at the compressor air intake of the gas turbine, re 10^{-12} W.												

The fundamental blade passing frequency from the first moving blade row (number of moving blades: 29; speed 50 s^{-1}) of the gas turbine compressor is 1450 Hz.

In addition to above it is recommended to provide additional noise control installations for the following parts of the compressor air intake duct to meet the noise limit mentioned above:

- sound insulation for the maintenance door of the compressor air intake duct
- sound cladding for the air-flap including the drive of the compressor air intake duct
- sound cladding for the compensator of the compressor air intake duct

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.1.1.4 Supporting Systems of each Gas Turbine Turbo Set

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA})	Recommended noise attenuation measure
Dehumidifier including flexible tubes [air dryer systems MBA10AT001]	$L'_P \leq 90$ dB(A)	Standard design, no additional sound protection measures required.
Fuel oil pump skid [MBN systems]	$L'_P \leq 90$ dB(A)	Standard design, no additional sound protection measures required.
Gas Turbine Hydraulic Skid [MBX systems]	$L'_P \leq 85$ dB(A)	Standard design, no additional sound protection measures required.
Lube Oil Tank Skid [MBV systems]	$L'_P \leq 85$ dB(A)	Standard design, no additional sound protection measures required
Other machines and components	$L'_P \leq 85$ dB(A)	Standard design.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively). Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.1.1.5 Air Ventilation Systems [emitted inside gas turbine packages]

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA})	Recommended noise attenuation measure
3 air exhaust units (3x33%, radial, _____m³/s,____Pa) including ductwork of each package (UMB), **in all** [Air handling units 11/12/13SAM31-33]	L'_P = 85 dB(A) L_w = 98 dB(A)	Absorption silencer (suction side): length 500 mm / thickness 200 mm / space 100 mm.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively). Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2 Outdoor Installations and Equipment

This chapter described the individual in-house noise requirements/limits for equipment and outdoor installations which emitted noises to the environment. Also the individual noise limits for the civil structure will be specified in this chapter. Furthermore sound protection measures / noise control installations for the equipment / outdoor installations will be recommended to meet the specified individual noise requirements/limits.

5.2.1 Gas Turbine Packages (11/12/13UMB)

5.2.1.1 Civil Design

To meet the general noise limits as described in chapter 4, the following civil design and the corresponding weighted apparent sound reduction index [R'_w] were assumed for the buildings as minimum requirement:

Part of the civil deign	Weighted apparent sound reduction index (R'_W)	Recommended noise attenuation measure
Walls and roof	$R'_W \geq 32$ dB	Recommended design (from inside to outside). • 0,6 mm thick trapezoidal steel sheet, splices should be overlapped and sealed with rubber joints • 50 mm thick mats of mineral wool with a density of 100 kg/m³ • 0,6 mm thick trapezoidal steel sheet.
Gates and doors	$R'_W \geq 15$ dB	Recommended gate/door design: • Single steel sheet gates or doors including sealing

Remark:

- The above mentioned weighted apparent sound reduction index is defined as described in ISO 140-4 and ISO 717-1. A test certificate shall verify the required values.

5.2.1.2 Air Ventilation Systems for the GT Packages [emitted to the environment]

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\ max}$)	Recommended noise attenuation measure
Air exhaust ventilation system for each package (air handling units including casing and ductwork 3x33%, radial, _____m³/s,____Pa) , **in all for each GT package** [Air handling units 11/12/13SAM31-33]	$L_W \leq 91$ dB(A) $L'_P \leq 80$ dB(A) $L_{pA\ max} \leq 83$ dB(A	Absorption silencers at the pressure side with the following baffles dimensions: length:750 mm; thickness:200 mm; space: 100 mm.
Air supply openings [S = ____m² in all], **in all for each GT package**	$L_W \leq 95$ dB(A) $L'_P \leq 80$ dB(A) $L_{pA\ max} \leq 83$ dB(A	Absorption silencers at the pressure side with the following baffles dimensions: length:500 mm; thickness:200 mm; space: 100 mm.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively). Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

The following A-weighted octave band sound pressure level expected within the gas turbine packages shall be used for the acoustically design for the air intake silencers of the air supply openings:

F_{oct}	32	63	125	250	500	1000	2000	4000	8000	Hz	Overall	
LpA	60	76	84	90	94	96	95	90	83	dB (A)	101	dB(A)

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2.2 Gas Turbine Filter House Openings (11/12/13MBL Systems)

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\,max}$)
Filter house openings (elbow casing, silencer casing and air inlet openings)	$L_W \leq 100$ dB(A) $L'_P \leq 80$ dB(A) $L_{pA\,max} \leq 85$ dB(A)

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively.)
- Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

In addition to the above mentioned individual noise limits clearly audible tonal components shall be avoided.

The following frequency-dependent sound power levels, expected at the compressor air intake, shall be used to design the wall design for the compressor air intake duct:

F_{oct}	32	63	125	250	500	1000	2000	4000	8000	Hz	Overall	
L_W	121	118	119	121	128	141	148	141	132	dB	151	dB(A)
Remark: The expected uncertainty is +3dB / -5dB for the 2kHz and ± 5dB for all other octave band levels and ± 3dB for the A-weighted overall sound power level												
Legend: „F_{oct} “ are the octave band centre frequencies. „L_W“ are the octave band sound power levels expected at the compressor air intake of the gas turbine, re 10^{-12} W.												

The fundamental blade passing frequency from the first moving blade row (number of moving blades: 29; speed 50 s^{-1}) of the gas turbine compressor is 1450 Hz.

According to experiences from other projects, the following noise control installations may be sufficient to meet the noise requirements. These data may, however, vary case by case and we do not assume any liability in that regard.

The following design is assumed for the air intake silencer of the filter house to meet the noise limit mentioned above:

Silencer dimension	Recommended noise attenuation measure
thickness of the baffles:	Approx. 250 mm
air space between the baffles:	Approx. 125 mm
length of the baffles:	Approx. 1 x 2300 mm

In addition to above the following noise control installations are assumed and recommended for the different parts of the gas turbine compressor system to meet the noise limits mentioned above:

Component	Recommended noise attenuation measure
Elbow casing and silencer casing	Wall design (inside to outside): • 6 mm thick steel sheet glued together with • 2 mm thick steel sheet • 3 mm adhesive layer between them • 120 mm thick mats of mineral wool (density > 100 kg/m³) • 2 mm thick steel sheet with elastic layer
Air-flap and compensator	A sound cladding will be recommended for both parts.

In addition to above it is recommended to provide additional noise control installations for the following parts of the compressor air intake duct to meet the noise limit mentioned above:

- sound cladding for the compensator of the compressor air intake duct
- sound insulation/cladding for the elbow and silencer casing if necessary.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2.3 Diffuser Extension Ducts of the Gas Turbines (11/12/13MBR Systems)

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\ max}$)
Diffuser extension duct	$L_W \leq 113$ dB(A)
Diffuser extension duct **plus** sound barrier walls	$L_W \leq 106$ dB(A) (relevant sound power level for far field sound pressure level calculation; the value includes screening effects (attenuation) of the sound barrier wall) $L_{pA\ max} \leq 83$ dB(A

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively.)
- Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

According to experiences from other projects, the following noise control installations may be sufficient to meet the noise requirements. These data may, however, vary case by case and we do not assume any liability in that regard.

The following noise control installations are assumed and recommended for the components to meet the noise limits mentioned above:

Component	Recommended noise attenuation measure
Diffuser extension duct	Wall design (inside to outside): • 3mm thick inner stainless steel • 150 mm thick mats of ceramic • 10 mm thick outer steel sheet
Diffuser extension duct **plus** sound barrier walls	Sound barrier walls with a height of approx. 8 m constructed at 1 m distance belong side of the diffuser extension duct. Design of the sound barrier walls: • 1mm thick trapezoidal steel sheet

The following frequency-dependent sound power levels, expected at the gas turbine exhaust, shall be used to design the sound protection measures for the diffuser extension duct:

F_{oct}	32	63	125	250	500	1000	2000	4000	8000	Hz	Overall	
L_W	141	144	139	136	140	144	149	146	140	dB	153	dB(A)

Remark:
The expected uncertainty is +3dB / -5dB for the 2kHz and ± 5dB for all other octave band levels and ± 3dB for the A-weighted overall sound power level

Legend:

„F_{oct} " are the octave band centre frequencies.

„L_W" are the octave band sound power levels expected at the gas turbine exhaust, re 10^{-12} W.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2.4 Exhaust Stacks (11/12/13UHN)

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\ max}$)
Elbow casing (stack base)	$L_W \leq 115$ dB(A)
Elbow casing (stack base) **plus** sound barrier walls	$L_W \leq 103$ dB(A) (relevant sound power level for far field sound pressure level calculation; the value includes screening effects (attenuation) of the sound barrier wall) $L_{pA\ max} \leq 83$ dB(A)
Silencer casing and duct of the exhaust stack, in **all**	$L_W \leq 98$ dB(A) $L_{pA\ max} \leq 85$ dB(A
Stack opening	$L_W \leq 105$ dB(A)

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively.)
- Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

According to experiences from other projects, the following noise control installations may be sufficient to meet the noise requirements. These data may, however, vary case by case and we do not assume any liability in that regard.

The following noise control installations are assumed and recommended for the components to meet the noise limits mentioned above:

Component	Recommended noise attenuation measure
Elbow casing (stack base)	Wall design (inside to outside): • 3mm thick inner stainless steel • 200 mm thick mats of ceramic • 8 mm thick outer steel sheet
Elbow casing (stack base) **plus** sound barrier walls	Sound barrier walls around the elbow casing from ground level up to the silencer casing constructed at 1 m distance form the elbow casing. Design of the sound barrier walls: • 1mm thick trapezoidal steel sheet
Silencer casing and duct of the exhaust stack, in **all**	Wall design (inside to outside): • 3mm thick inner stainless steel • 150 mm thick mats of ceramic • 6 mm thick outer steel sheet
Stack opening	Absorption silencer with the following design: • 500 mm: approx. thickness of the baffles: • 250 mm: approx. space between the baffles • 2 x 4000 mm: approx. length of the baffles

The following frequency-dependent sound power levels, expected at the gas turbine exhaust, shall be used to design the sound protection measures for the stack:

F_{oct}	32	63	125	250	500	1000	2000	4000	8000	Hz	Overall	
L_W	141	144	139	136	140	144	149	146	140	dB	153	dB(A)
Remark: The expected uncertainty is +3dB / -5dB for the 2kHz and ± 5dB for all other octave band levels and ± 3dB for the A-weighted overall sound power level												
Legend: „F_{oct} " are the octave band centre frequencies. „L_W" are the octave band sound power levels expected at the gas turbine exhaust, re 10^{-12} W.												

Remark: The sound power level caused by flow induced noise shall be taken into account for the design of the silencer. The flow noise shall be determined in accordance with VDI 3733 for the stack duct and in accordance with ISO 14163 between the silencer baffles.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2.5 Lube Oil Coolers – MBV System (11/12/13URC)

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\,max}$)	Recommended noise attenuation measure
Lube oil fin fan cooler (3 cells), **in all per Unit**	$L_W \leq 99$ dB(A) $L'_P \leq 80$ dB(A) $L_{pA\,max} \leq 83$ dB(A)	Low noise design or appropriate noise control installations.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively). Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2.6 Forced Cooling Water Coolers – MPR System (11/12/13URB)

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\,max}$)	Recommended noise attenuation measure
Generator fin fan cooler (12 ??? cells), **in all per Unit**	$L_W \leq 103$ dB(A) $L'_P \leq 80$ dB(A) $L_{pA\,max} \leq 83$ dB(A)	Low noise design or appropriate noise control installations.
Cooling water pump sets for the generator fin fan cooler, **in all per Unit**	$L_W \leq 95$dB(A) $L'_P \leq 77$ dB(A) $L_{pA\,max} \leq 83$ dB(A)	Standard design or appropriate noise control installations.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively). Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2.7 Transformers (11/12/13UBD/UBE/UBF)

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\,max}$)	Recommended noise attenuation measure
Generator transformer BAT, each (11/12/13UBF) *1)	$L_W \leq 100$ dB(A) $L'_P \leq 80$ dB(A)	Low noise design or appropriate noise control installations.
HV auxiliary transformer BBT, each (11/12/13UBE)	$L_W \leq 85$ dB(A)	Standard design.
Low voltage transformers BBT, each (11/12/13UBD)	$L_W \leq 78$dB(A)	Standard design.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively.)
- Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

*1) During 100% steady state base load operating condition.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2.8 Power Control Centers (11/12/13UBA)

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\,max}$)	Recommended noise attenuation measure
AC unit of the PCC's, in all (11/12/13UBA01-02)	$L_W \leq 87$ dB(A) $L'_P \leq 80$ dB(A)	Standard design.

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively.)
- Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

The final design of the noise control installations, provided for the above mentioned components shall be agreed with Siemens department W7PM.

5.2.9 Unidentified Noise Sources

To meet the general noise limits as described in chapter 4, the following specific noise limit shall not be exceeded:

Component	Individual Noise Limit (L_{wA} / L'_{pA})
Unidentified and unknown noise sources, **in all for each unit (11/12/13)**	$L_W \leq 110$ dB(A)

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively.)
- Sound levels are valid per component, if not indicated otherwise.
- Deductions of measurement uncertainties are not allowed in the scope of acoustic testing.

Devision of the sound power level contintgent can be performed only by Siemens PG W7PM.

5.2.10 Eskom Scope of Supply

The control room building and the fuel oil supply and handling system are in Eskom scope of supply.

Generally Eskom is solely responsible for the acoustic design of its scope of supply. Nevertheless the following noise limits will be **recommended** for Eskom scope of supply.

Building / Component / System	Individual Noise Limit (L_{wA} / L'_{pA} / $L_{pA\,max}$)
Control room building 00UCA/UBA	
Air ventilation systems, air conditioning systems and refrigerating units, **in all**	$L_W \leq 95$ dB(A) $L_{pA\,max} \leq 83$ dB(A)
Fuel oil supply and handling system (UEL/UEH)	
Fuel oil forwarding pump sets**, in all**	$L_W \leq 99$ dB(A) $L_{pA\,max} \leq 85$ dB(A)
Fuel oil transfer pump sets**, in all**	$L_W \leq 99$ dB(A) $L_{pA\,max} \leq 85$ dB(A)

Remark:

- The surface sound pressure levels and/or sound power levels mentioned above are defined as described in ISO 3740-46. (Surface sound pressure levels to be measured at a distance of 1m from the component and its sound attenuation device respectively.)
- Sound levels are valid per component, if not indicated otherwise.

6 Sound Pressure Levels inside Pant Rooms / Process Buildings

To calculate the spatially averaged sound pressure levels, expected inside the process buildings and plant rooms, it is necessary to determine the sound power levels emitted inside the rooms/buildings from noise relevant machines and components.

It is also necessary to know the reverberation time anticipated inside the room/building to calculate the spatially averaged sound pressure levels. The frequency dependent reverberation time, used for the calculation of the sound pressure levels expected inside the room/building, was taken from results of noise tests carried out by Siemens at comparable power stations.

The specified / guaranteed spatially averaged sound pressure levels are valid for 100% steady state base load operation of the power plant and excepted for the following transients:

- Construction and installation of the power plant
- Commissioning of the power plant
- Emergency operating conditions (e.g. diesel generator operation)

The local sound pressure levels at different locations inside the plant rooms and process buildings can be lower or higher, but the average of the local sound pressure levels will be about the mean values mentioned below.

The spatial averaged sound pressure levels, especially for the process buildings, like gas turbine building or packages a. s. o. are the basis for the calculation of the sound power levels emitted to the environment by the sound transmission through roofs, facades, gates, doors, and air ventilation inlets of the building.

6.1 Gas Turbine Packages (11/12/13UMB)

The following spatial averaged sound pressure level can be expected inside the gas turbine packages during periods of normal operating conditions (100% base load):

- L_{eq} = 101 dB(A) as an spatial averaged noise level around the equipment, measured at a height of 1,5 m above ground level 0 m.

7 Noise Emission to the Environment

The calculation of the near field and far field sound pressure levels expected in the surrounding and caused by the noise emitted from the "OCGT Eskom – Mossel Bay", depends on the sound power levels emitted to the environment from the individual noise sources. The specific noise levels specified for the individual noise sources of the Siemens scope of supply are described under chapter 5 of this report. The determination of the sound power levels emitted to the environment is based on the following input data:

- Technical data provided by subcontractors of noise relevant machines / components
- Spatially averaged sound pressure levels expected inside the plant process buildings and rooms as described in chapter 6 of this report
- Sound protection measures for outdoor installed components as recommended in chapter 5.2 of this report
- Civil design of the plant process buildings as recommended in chapter 5.2 of this report

The calculation of the sound power levels emitted to the environment from the functional groups was performed for the octave band centre frequencies 31.5 Hz to 8000 Hz.

The sound power levels and surface sound pressure levels described under chapter 5 of this report are the basis for the near field and far field sound pressure level calculation of the Siemens scope of supply.

Taking into account the assumed / recommended noise control installations the **essential functional groups** of the "OCGT Eskom – Mossel Bay", will emit the following sound power levels to the environment (**see following Table 1)** during steady-state base load operation of all Units of the gas turbine power plant.

Table 1: Emitted sound power levels to the environment from the **essential functional groups** of the OCGT Eskom – Mossel Bay:

Buildings / Essential Functional Groups	L_{WA}
Gas Turbine Unit 11 (steady-state base load operation)	
Gas Turbine Package 11UMB	104 dB(A)
Gas Turbine Filter House 11MBL	100 dB(A)
Gas Turbine Diffuser Extension Duct 11MBR	106 dB(A)
Exhaust Stack 11UHN	108 dB(A)
Lube Oil Cooler 11URC (MBV System)	99 dB(A)
Forced Cooling Water Cooler 11URB (MPR System)	103 dB(A)
Transformers 11BAT/BBT/BFT	100 dB(A)
Power Control Centers 11UBA01-02	87 dB(A)
Unidentified Noise Sources Unit 11	110 dB(A)
Gas Turbine Unit 12 (steady-state base load operation)	
Gas Turbine Package 12UMB	104 dB(A)
Gas Turbine Filter House 12MBL	100 dB(A)
Gas Turbine Diffuser Extension Duct 12MBR	106 dB(A)
Exhaust Stack 12UHN	108 dB(A)
Lube Oil Cooler 12URC (MBV System)	99 dB(A)
Forced Cooling Water Cooler 12URB (MPR System)	103 dB(A)
Transformers 12BAT/BBT/BFT	100 dB(A)
Power Control Centers 12UBA01-02	87 dB(A)
Unidentified Noise Sources Unit 12	110 dB(A)
Gas Turbine Unit 13 (steady-state base load operation)	
Gas Turbine Package 13UMB	104 dB(A)
Gas Turbine Filter House 13MBL	100 dB(A)
Gas Turbine Diffuser Extension Duct 13MBR	106 dB(A)
Exhaust Stack 13UHN	108 dB(A)
Lube Oil Cooler 13URC (MBV System)	99 dB(A)
Forced Cooling Water Cooler 13URB (MPR System)	103 dB(A)
Transformers 13BAT/BBT/BFT	100 dB(A)
Power Control Centers 13UBA01-02	87 dB(A)
Unidentified Noise Sources Unit 13	110 dB(A)
Eskom Scope Of Supply	
Control Room Building 00UCA/UBA	92 dB(A)
Fuel Oil Supply and Handling System UEL/UEH	102 dB(A)
Total Sound Power Level emitted to the environment from the OCGT Eskom – Mossel Bay	***119 dB(A)***

8 Near Field Sound Pressure Levels (Outdoor Installations)

The near field level, measured at 1 m distance from building and outdoor installed machines and components (Siemens Scope) of the power plant will be essentially influenced by the noise contribution of the following noise sources:

- Civil structure (facades, roofs, gates, doors) of the buildings
- Air inlets and outlets of the air ventilation systems
- Gas turbine compressor air intake systems
- Gas turbine diffuser extension duct
- Exhaust stacks
- Gas turbine compressor air intake system
- Transformers
- Fuel oil supply and handling systems

On the assumption that the individual noise limits, described under chapter 5 of this report will be met, the required **maximum** A-weighted sound pressure level of ≤ **85 dB(A)** can be expected at a distance of ≥1 m from the outdoor installations and their attenuation devices respectively and at a height of 1.5 m above ground level / walkway level during 100% base load operating conditions of the power plant.

Note: Noise caused by components which are not in the Siemens scope of supply are not included.

9 Far Field Noise Levels

9.1 Continuous Noise Emissions

On the basis of the noise emission data shown in chapter 5, 6 and 7 of this report, a sound propagation calculation was carried out for the “OCGT Eskom – Mossel Bay”.

The calculation of the far field sound pressure levels caused by the power station is carried out in accordance with VDI Guideline 2571 „Sound radiation from industrial buildings (August 1976)” and ISO 9613-2 ”Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation (12/1996)”. For the calculation of the distance dependent level reduction the following effects were taken into account:

- attenuation due to geometrical divergence
- attenuation due to atmospheric absorption (air temperature 15°C, relative humidity 70%)
- attenuation due to ground effects
- attenuation due to meteorology effects
- attenuation effects due a barrier

The following **Table 2** shows the calculated and expected far field sound pressure levels at the selected receiving points RP1 to RP4 (see following **Figure 1**), which are located at a distance of 1100 m from the outermost point of the power plant installations.

Table 2: Calculated and expected sound pressure levels at the receiving points (RP1 to RP4):

Selected receiving point (RP)	Calculated and expected far field sound pressure level [L_{EQ}]	Guaranteed far field sound pressure level during night time [L_{EQ}]
RP1	43 dB(A)	45 dB(A)
RP2	44 dB(A)	45 dB(A)
RP3	44 dB(A)	45 dB(A)
RP4	43 dB(A)	45 dB(A)

On the assumption that the individual noise limits (see chapter 5) will not be exceeded the required far field sound pressure level of **45 dB(A)** (night-time) will be met at the clients at the specified distance of 1100 m during simultaneously operation of all power plant units.

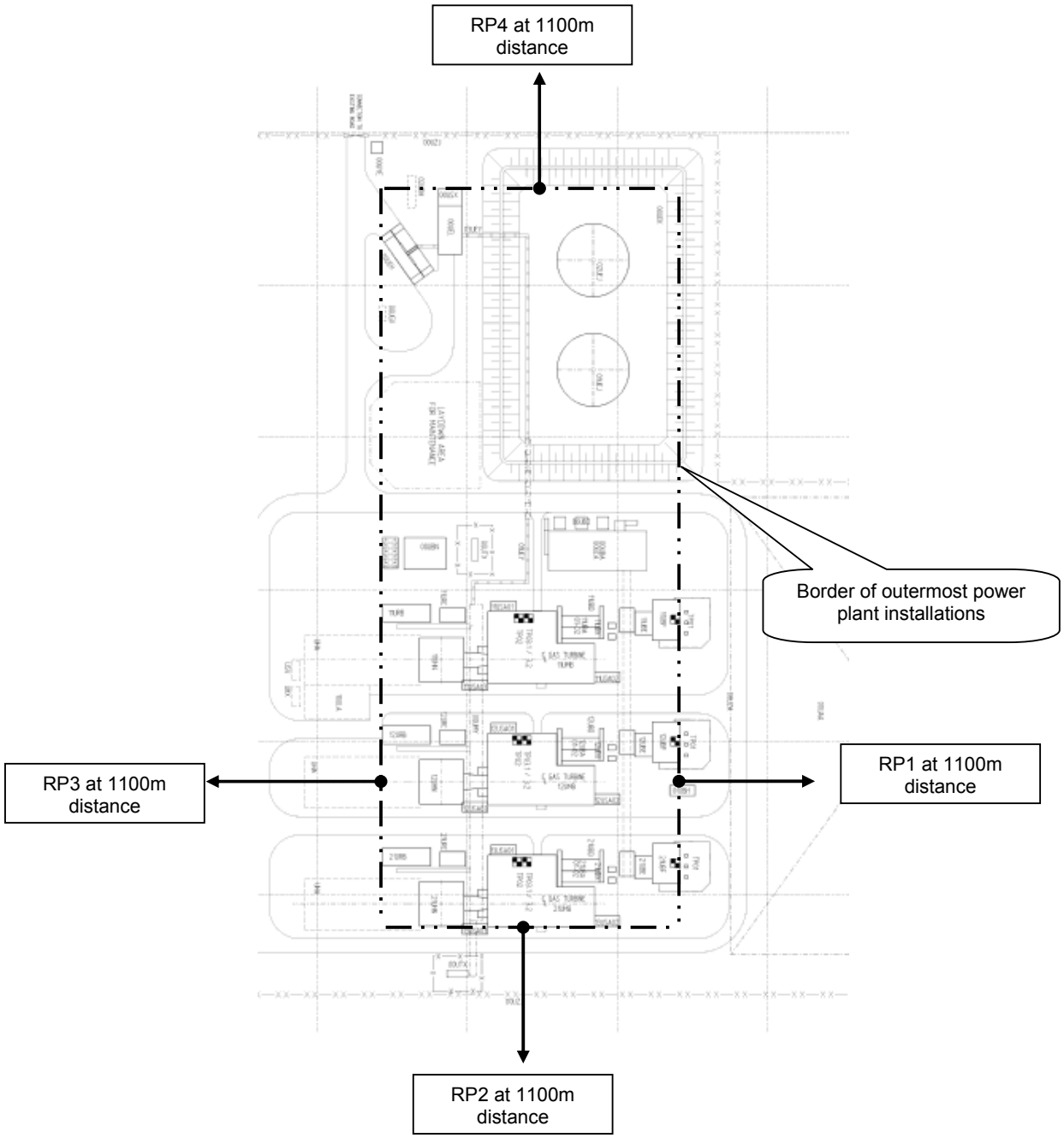
The acoustically design of the complete combined cycle power plant is based on the acoustic critical night-time. If the critical night time level will be not exceeded inevitably the permissible daytime level of **55 dB(A)** will be also met.

The calculated sound pressure levels expected at the receiving points are "mean downwind levels" according to ISO 9613-2 [14]. The calculated value will only occur if the wind blows from the direction of the site to the far field receiving point. In case of other wind directions a lower level can be expected.

It has been assumed for the calculation that the sound propagation occurs over hard ground or mixed ground most of which is hard.

The detailed calculation of the expected far field sound pressure levels (mean downwind sound pressure levels) caused by the individual outdoor components and buildings is documented in Appendix A (not included in this report). If needed, please feel free to contact the author of this report.

Figure 1 shows the selected receiving points (RP1 to RP4) located at 1100 m distance from the outermost point of power plant installations.



9.2 Infrequent Noise Emissions

The noise emissions emitted to the environment from the different functional groups of the gas turbine power plant are very constantly and homogeneous over the entire range of performance of the power plant.

Infrequent noise sources such as steam blow off systems, safety valves a. s. o. aren't existent in a gas turbine power plant.

Under consideration of the aforementioned statement the far field noise guarantee shown in Chapter 4.4 of this noise report can be also adhered.

10 Concluding Remarks

The individual noise limits specified for the noise relevant machines, components and buildings of the "OCGT Eskom – Mossel Bay" will be met with the noise control installations described in chapter 5.

On the assumption that the individual noise limits (see chapter 5) will not be exceeded the following general noise limits (as specified in detail in chapter 4) will be met:

Near Field Sound Levels

Outdoor Installations (Noise Local to Plant)

- **Maximum** A-weighted sound pressure level (L_{EQ}) of **85 dB(A)** measured at a distance of ≥1 m from the outdoor installations and their attenuation devices respectively and at a height of 1.5 m above ground level/walkway level.

Far Field Sound Levels

Continuous Noise Emissions

The following sound pressure levels will not be exceeded in the far field, measured at a distance of 1100 m from the outermost point of the plant installations:

- Night-time: L_{EQ} **≤ 45 dB(A)**
- Daytime: L_{EQ} **≤ 55 dB(A)**

Infrequent Noise Sources

Infrequent noise sources such as steam blow off systems, safety valves a. s. o. aren't existent in a gas turbine power plant. Therefore the far field noise guarantee shown in Chapter 4.4 of this noise report will be also not exceeded.

The sound levels guaranteed above are valid for steady-state base load operation of the power plant and excepted for the following abnormal transients:

- Construction and installation of the power plant
- Commissioning of the power plant

Excluded from noise guarantees (near field and far field) are furthermore the noise emitted by facilities outside the Contracting Siemens scope, noise contribution from any industry or power equipment in the vicinity.

Appendix A

Appendix A: Detailed calculation of expected sound pressure levels at the receiving positions
(Appendix A is not included in this report. If needed, please feel free to contact the author of this report.)

Annex A

Content

1 Explanation of the Result Tables

Table of noise sources

Column:	
Short name and Description	Short designation of the individual noise sources Exact designation of the sources with additional explanations

Table of spectra used

Column:	
No.	Number of the spectrum
Short name	Short designation of the spectrum
L_p/L_W	´L_p´ for sound pressure level spectra, ´L_w´ for sound power level spectra (A-weighted)
32 - 8 k [Hz]	Levels within the octave bands
∑ [dB(A)]	A-weighted sum levels, calculated from the octave spectrum

This line may be followed by additional explanations.

Table of sound reduction indices used

This table shows the frequency-dependent sound reduction indices, insertion losses, directivity indices, level reductions, etc. used for the calculation.

Column:	
No.	Number of the sound reduction index
Short name	Designation of the sound reduction index, insertion loss, etc.
32 - 8 k [Hz]	Sound reduction indices within the individual octave bands
R'_w [dB]	Possibly the weighted sound reduction index R'_w

This line may be followed by additional explanations.

Table of sound power levels of the noise sources

This table shows the sound power levels of the noise sources installed which have optionally been calculated with or without time rating.

Column:	
Noise source	Short designation of the noise source
Spectrum	Short designation of the spectrum
Trans./Insert. loss	Short designation of sound reduction indices; if more than one reduction index (maximum 4) is indicated, the short designations 2 to 4 will be listed in the 2nd line and separated by '+'
Coordinates [m]	X-, Y-coordinates and the height of the noise source above ground
Number [Stk]	Number of noise sources summarized to one
Surface [m²]	Measuring surface, enveloping or radiating surface of the noise source
diff [dB]	Correction index for the sound field transition from the inside to the outside
Time [dB]	Time rating for discontinuously emitting sources (option)
32 - 8k [Hz]	A-weighted sound power levels within the individual octave bands
L_{WA} [dB(A)]	A-weighted added sound power levels calculated based on the sound power levels within the individual octave bands

The energetic sum of the power spectra of source groups is indicated as subtotal. Finally, the total sound power level of all the sources is shown.

Tables of immission levels

These tables show the long-term or downwind average levels at the receptor points calculated according to E DIN ISO 9613-2. The headline of the table indicates the respective designation of the receptor point including its coordinates. For each noise source the following indications will be made in a **maximum of three lines**:

Column:	
1st line:	
Noise source	Short designation of the noise source
Spectrum	Short designation of the spectrum
Trans./Insert. loss	Short designation of the first reduction index
Number [Stck.]	Number of noise sources summarized to one
Dist [m]	Distance between noise source and receptor point
A_{gr} [dB]	Ground effect
Surface [m²]	Surface of the noise source
diff [dB]	Correction coefficient for the sound field transition from the inside to the outside
C_{met} [dB]	Meteorological correction (only for long-term average levels)
Dc [dB] o. RW	Directivity correction = sum of the directivity indices D_I and D_Ω **or** frequency-dependent directivity index
Time [dB]	Time rating for discontinuously emitting sources
ΔL [dB]	Frequency-dependent allowances or deductions
L_s [dB(A)] bzw. L_{WA} [dB(A)]	A-weighted sound pressure levels at the receptor point or, respectively, immission-effective sound power levels
2nd line (optional):	
Noise source	Product $z \cdot K_{met}$ for the calculation of the insertion loss A_{bar} by a sound screen
Trans./Insert. loss	If more than one reduction index (maximum 4) is indicated, the short designations 2 to 4 will be listed in the 2nd line and separated by '+'.
Dc [dB] o. RW	Designation of a spectrum used, taken from the sound reduction index table (e. g. frequency-dependent directivity)
3rd line (alternatively 2nd line):	
32 - 8k [Hz]	A-weighted immission levels or, respectively, immission-effective sound power levels within the octaves

In case a subdivision in source groups exists, the respective subtotal levels of the groups are calculated and indicated, in addition.
As an option, only the proportional levels of source groups as well as the immission levels of single sources of selected groups will be printed out in a short version.
The last line of the result table shows the programme version, the name of the project folder and the selected operating condition.

2 Tables of the Sound Propagation Calculation

Table 1 OCGT Eskom Mossel Bay 3xSGT5-2000
Names and Descriptions of the Sound Sources

Short name and	Description
Gas Turbine Package 11UMB	
wall N	wall north
wall E	wall east
wall S	wall south
wall W	wall west
roof	roof
gate E	gate east
gate W	gate west
doors	doors
air suppl. op. N	air supply openings in wall north
air suppl. op. E	air supply openings in wall east
air suppl. op. S	air supply openings in wall south
air exh. Unit N	air exhaust ventilation unit north
air exh. Units S	air exhaust ventilation units south
Gas Turbine Filterhouse 11MBL	
EB casing	elbow casing
SL casing	silencer casing
FHA intakes	filterhouse air intakes
Gas Turbine Diffuser Extension Duct 11MBR	
diff. ext. duct	diffuser extension duct
Exhaust Stack 11UHN	
LS part	lower part of the exhaust stack
SL casing	exhaust silencer casing
outlet duct	outlet duct
stack outlet	stack outlet
Lube Oil Coolers 11URC (MBV-System)	
FFC air int.	fin-fan cooler fan (air intake)
FFC air outl.	fin-fan cooler fan (air outlet)
Forced Cooling Water Cooler 11URB (MPR-System)	
FFC air int.	fin-fan cooler fan (air intake)
FFC air outl.	fin-fan cooler fan (air outlet)
Transformers 11BAT/BBT/BFT	
11BAT TF UBF	generator transformer 165MVA
11BBT TF UBE	HV-auxiliary transformer
11BFT TFUBD	low voltage transformers
Power Control Centers 11UBA01-02	
11UBA, ACU	air conditioning unit of a power control centre
Unidentified Noise Sources Unit 11	
UIF-NC	unidentified noise sources
Gas Turbine Package 12UMB	
wall N	wall north
wall E	wall east
wall S	wall south
wall W	wall west
roof	roof
gate E	gate east

Table 1 OCGT Eskom Mossel Bay 3xSGT5-2000
Names and Descriptions of the Sound Sources

Short name and	Description
Gas Turbine Diffuser Extension Duct 12MBR	
diff. ext. duct	diffuser extension duct
Exhaust Stack 12UHN	
LS part	lower part of the exhaust stack
SL casing	exhaust silencer casing
outlet duct	outlet duct
stack outlet	stack outlet
Lube Oil Coolers 12URC (MBV-System)	
FFC air int.	fin-fan cooler fan (air intake)
FFC air outl.	fin-fan cooler fan (air outlet)
Forced Cooling Water Cooler 12URB (MPR-System)	
FFC air int.	fin-fan cooler fan (air intake)
FFC air outl.	fin-fan cooler fan (air outlet)
Transformers 12BAT/BBT/BFT	
12BAT TF UBF	generator transformer 165MVA
12BBT TF UBE	HV-auxiliary transformer
12BFT TFUBD	low voltage transformers
Power Control Centers 12UBA01-02	
12UBA, ACU	air conditioning unit of a power control centre
Unidentified Noise Sources Unit 12	
UIF-NC	unidentified noise sources
Gas Turbine Package 13UMB	
wall N	wall north
wall E	wall east
wall S	wall south
wall W	wall west
roof	roof
gate E	gate east
gate W	gate west
doors	doors
air suppl. op. N	air supply openings in wall north
air suppl. op. E	air supply openings in wall east
air suppl. op. S	air supply openings in wall south
air exh. Unit N	air exhaust ventilation unit north
air exh. Units S	air exhaust ventilation units south
Gas Turbine Filterhouse 13MBL	
EB casing	elbow casing
SL casing	silencer casing
FHA intakes	filterhouse air intakes
Gas Turbine Diffuser Extension Duct 13MBR	
diff. ext. duct	diffuser extension duct
Exhaust Stack 13UHN	
LS part	lower part of the exhaust stack
SL casing	exhaust silencer casing
outlet duct	outlet duct
stack outlet	stack outlet
Lube Oil Coolers 13URC (MBV-System)	
FFC air int.	fin-fan cooler fan (air intake)
FFC air outl.	fin-fan cooler fan (air outlet)
Forced Cooling Water Cooler 13URB (MPR-System)	
FFC air int.	fin-fan cooler fan (air intake)
FFC air outl.	fin-fan cooler fan (air outlet)
Transformers 13BAT/BBT/BFT	
13BAT TF UBF	generator transformer 165MVA
13BBT TF UBE	HV-auxiliary transformer
13BFT TFUBD	low voltage transformers
Power Control Centers 13UBA01-02	

Table 1 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Names and Descriptions of the Sound Sources

Short name and	Description
13UBA, ACU	air conditioning unit of a power control centre
Unidentified Noise Sources Unit 13	
UIF-NC	unidentified noise sources
Control Room Building 00UCA/UBA (Clients Scope of Supply)	
ACSCU 1	air intake fans (east)
ACSCU 2	air exhaust fan (roof)
ACSCU 3	air intake fans (east)
RFG unit	air exhaust fan (roof)
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)	
fuel oil transfer pun	fuel oil transfer pump set
fuel oil forwarding p	fuel oil forwarding pump set

Table 2 OCGT Eskom Mossel Bay 3xSGT5-2000
List of the used Octave Band Sound Levels

No.	Short name	Lp/ Lw	A- weighted octave band level 32	63	125	250	500	1k	2k	4k	8kHz	Σ dB(A)
Gas Turbine Package 11UMB												
308	SPL ins. UMB	Lp	59,6	76,1	83,4	90,1	94,3	96,1	94,8	90,2	83,1	*101*
	average sound pressure level (normal operating conditions at base load)											
310	House, Fan	Lw	64,6	76,8	85,9	92,4	94,8	93	89,2	83	74,9	*99*
	2*50% / radial-backward / 72000m³/h / 800Pa											
Gas Turbine Filterhouse 11MBL												
65	GT compr. ait.	Lw	81,6	91,8	102,9	112,4	124,8	141	149,2	142	130,9	*151*
	at the compressor air intake of the gas turbine											
Gas Turbine Diffuser Extension Duct 11MBR												
66	GT diff. exh.	Lw	101,6	117,8	122,9	127,4	136,8	144	150,2	147	138,9	*153*
	at the diffuser exhaust of the gas turbine											
Exhaust Stack 11UHN												
66	GT diff. exh.	Lw	101,6	117,8	122,9	127,4	136,8	144	150,2	147	138,9	*153*
	at the diffuser exhaust of the gas turbine											
Lube Oil Coolers 11URC (MBV-System)												
275	LOC air int.	Lw	47,6	62,8	74,9	83,4	83,8	83	82,2	80	76,9	*90*
	1 lube oil cooler cell (air intake)											
276	LOC air outl.	Lw	49,6	64,8	76,9	85,4	85,8	85	84,2	82	78,9	*92*
	1 lube oil cooler cell (air outlet fan)											
Forced Cooling Water Cooler 11URB (MPR-System)												
275	LOC air int.	Lw	47,6	62,8	74,9	83,4	83,8	83	82,2	80	76,9	*90*
	1 lube oil cooler cell (air intake)											
276	LOC air outl.	Lw	49,6	64,8	76,9	85,4	85,8	85	84,2	82	78,9	*92*
	1 lube oil cooler cell (air outlet fan)											
Transformers 11BAT/BBT/BFT												
226	GT gen. transf.	Lw	39,6	62,8	86,9	93,4	95,8	94	88,2	84	71,9	*100*
	generator transformer (BAT)											
225	UBE transf.	Lw	23,6	50,8	75,9	82,4	75,8	77	71,2	63	49,9	*85*
	auxiliary transformer (BBT)											
224	UBD transf.	Lw	19,6	43,8	68,9	75,4	68,8	70	64,2	56	42,9	*78*
	low voltage transformer (UBD)											
Power Control Centers 11UBA01-02												
52	UBA, ACU	Lw	49,1	61,3	70,4	76,9	79,3	77,5	73,7	67,5	59,4	*84*
	air conditioning unit of a power control centre											
Unidentified Noise Sources Unit 11												
298	UIF-NC	Lw	85	98	103	106	103	100	95	89	83	*110*
	unidentified noise sources											
Gas Turbine Package 12UMB												
308	SPL ins. UMB	Lp	59,6	76,1	83,4	90,1	94,3	96,1	94,8	90,2	83,1	*101*
	average sound pressure level (normal operating conditions at base load)											
310	House, Fan	Lw	64,6	76,8	85,9	92,4	94,8	93	89,2	83	74,9	*99*
	2*50% / radial-backward / 72000m³/h / 800Pa											
Gas Turbine Filterhouse 12MBL												
65	GT compr. ait.	Lw	81,6	91,8	102,9	112,4	124,8	141	149,2	142	130,9	*151*
	at the compressor air intake of the gas turbine											

Table 2 OCGT Eskom Mossel Bay 3xSGT5-2000
List of the used Octave Band Sound Levels

No.	Short name	Lp/ Lw	A- weighted octave band level 32	63	125	250	500	1k	2k	4k	8kHz	Σ dB(A)
Forced Cooling Water Cooler 12URB (MPR-System)												
275	LOC air int.	Lw	47,6	62,8	74,9	83,4	83,8	83	82,2	80	76,9	*90*
	1 lube oil cooler cell (air intake)											
276	LOC air outl.	Lw	49,6	64,8	76,9	85,4	85,8	85	84,2	82	78,9	*92*
	1 lube oil cooler cell (air outlet fan)											
Transformers 12BAT/BBT/BFT												
226	GT gen. transf.	Lw	39,6	62,8	86,9	93,4	95,8	94	88,2	84	71,9	*100*
	generator transformer (BAT)											
225	UBE transf.	Lw	23,6	50,8	75,9	82,4	75,8	77	71,2	63	49,9	*85*
	auxiliary transformer (BBT)											
224	UBD transf.	Lw	19,6	43,8	68,9	75,4	68,8	70	64,2	56	42,9	*78*
	low voltage transformer (UBD)											
Power Control Centers 12UBA01-02												
52	UBA, ACU	Lw	49,1	61,3	70,4	76,9	79,3	77,5	73,7	67,5	59,4	*84*
	air conditioning unit of a power control centre											
Unidentified Noise Sources Unit 12												
298	UIF-NC	Lw	85	98	103	106	103	100	95	89	83	*110*
	unidentified noise sources											
Gas Turbine Package 13UMB												
308	SPL ins. UMB	Lp	59,6	76,1	83,4	90,1	94,3	96,1	94,8	90,2	83,1	*101*
	average sound pressure level (normal operating conditions at base load)											
310	House, Fan	Lw	64,6	76,8	85,9	92,4	94,8	93	89,2	83	74,9	*99*
	2*50% / radial-backward / 72000m³/h / 800Pa											
Gas Turbine Filterhouse 13MBL												
65	GT compr. ait.	Lw	81,6	91,8	102,9	112,4	124,8	141	149,2	142	130,9	*151*
	at the compressor air intake of the gas turbine											
Gas Turbine Diffuser Extension Duct 13MBR												
66	GT diff. exh.	Lw	101,6	117,8	122,9	127,4	136,8	144	150,2	147	138,9	*153*
	at the diffuser exhaust of the gas turbine											
Exhaust Stack 13UHN												
66	GT diff. exh.	Lw	101,6	117,8	122,9	127,4	136,8	144	150,2	147	138,9	*153*
	at the diffuser exhaust of the gas turbine											
Lube Oil Coolers 13URC (MBV-System)												
275	LOC air int.	Lw	47,6	62,8	74,9	83,4	83,8	83	82,2	80	76,9	*90*
	1 lube oil cooler cell (air intake)											
276	LOC air outl.	Lw	49,6	64,8	76,9	85,4	85,8	85	84,2	82	78,9	*92*
	1 lube oil cooler cell (air outlet fan)											
Forced Cooling Water Cooler 13URB (MPR-System)												
275	LOC air int.	Lw	47,6	62,8	74,9	83,4	83,8	83	82,2	80	76,9	*90*
	1 lube oil cooler cell (air intake)											
276	LOC air outl.	Lw	49,6	64,8	76,9	85,4	85,8	85	84,2	82	78,9	*92*
	1 lube oil cooler cell (air outlet fan)											
Transformers 13BAT/BBT/BFT												
226	GT gen. transf.	Lw	39,6	62,8	86,9	93,4	95,8	94	88,2	84	71,9	*100*
	generator transformer (BAT)											
225	UBE transf.	Lw	23,6	50,8	75,9	82,4	75,8	77	71,2	63	49,9	*85*
	auxiliary transformer (BBT)											
224	UBD transf.	Lw	19,6	43,8	68,9	75,4	68,8	70	64,2	56	42,9	*78*
	low voltage transformer (UBD)											
Power Control Centers 13UBA01-02												
52	UBA, ACU	Lw	49,1	61,3	70,4	76,9	79,3	77,5	73,7	67,5	59,4	*84*
	air conditioning unit of a power control centre											
Unidentified Noise Sources Unit 13												
298	UIF-NC	Lw	85	98	103	106	103	100	95	89	83	*110*
	unidentified noise sources											
Control Room Building 00UCA/UBA (Clients Scope of Supply)												

Table 2 OCGT Eskom Mossel Bay 3xSGT5-2000
List of the used Octave Band Sound Levels

		Lp/	A- weighted octave band level									Σ
No.	Short name	Lw	32	63	125	250	500	1k	2k	4k	8kHz	dB(A)
37	ACSCU air cooled split cooling unit	Lw	49,2	63,6	74,8	84,8	89,6	92	88,4	86	77,8	*96*
38	HVAC RFU refrigerating unit (watercooled)	Lw	60	60	66	78	83	99	101	95	84	*104*
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)												
316	FOTF pump fuel oil transfer pump set	Lp	20,6	44,8	62,9	69,4	73,8	75	73,2	71	59,9	*80*
317	FOFW pump fuel oil forwarding pump set	Lp	15,6	46,8	64,9	67,4	71,8	74	74,2	73	66,9	*80*

Table 3 OCGT Eskom Mossel Bay 3xSGT5-2000
Transmission / Insertion Loss Values of Sound Protection Measures

		R [dB]									R'_w
No.	Short name	32	63	125	250	500	1k	2k	4k	8kHz	dB
Gas Turbine Package 11UMB											
249	0,6(S/MW/TS)	2	8	14	20	30	41	43	44	45	*32*
	0,6mm sheet steel (splices should be overlapped and should be sealed with rubber joint) + 50mm mineral wool + 0,6mm trapezoidal steel sheet										
287	steel s. gate	2	6	8	12	14	15	18	23	23	*16*
	steel sheet gate with sealings										
292	[SL 2/1/5]	0	2	3	8	16	26	19	14	10	
	sound absorption slencer (2 / 1 / 5); manufacturer: G & H dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length										
293	[SL 2/1/7,5]	0	2	5	11	22	34	26	18	12	
	sound absorption slencer (2 / 1 / 7,5); manufacturer: G & H dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length										
Gas Turbine Filterhouse 11MBL											
163	[S/120MW/S]	26	28	40	50	51	64	64	64	58	*58*
	2mm steel sheet with acoustic layers + 120mm mineral wool + 2mm steel sheet glued together with 6mm steel sheet (3mm adhesive layer between them)										
6	1 elbow	3	3	2	2	2	2	2	2	2	
	insertion loss values of 1 acoustical effective elbow										
27	0,25 x AIS	0,45	1,125	3,175	9	14,18	14,98	15	13,48	4,875	
	0,25 x dynamic insertion loss values of air intake slencer (2,5 / 1,25 / 1 x 23) silencer dimensions in [dm]: baffle thickness / space betw. the baffles / baffle-length)										
28	2 x filter	0	0	0	0	2	6	13	15	11	
	2 x rows of filters										
26	AI silencer	1,8	4,5	12,7	36	56,7	59,9	60	53,9	19,5	
	dynamic insertion loss values of air intake slencer (2,5 / 1,25 / 1 x 23) silencer dimensions in [dm]: baffle thickness / space betw. the baffles / baffle-length)										
Gas Turbine Diffuser Extension Duct 11MBR											
42	3 ST/150/10 ST	47	43	39	37	39	47	51	53	52	*45*
	3mm thick stainless steel, 150mm thick mats of ceramic wool, 10mm thick sheet steel										
58	insertion loss value SBW	-2	-0,5	1,5	4	6,5	9	10	10	10	
	insertion loss value caused by the SBW for 1100m distance (8m height)										
Exhaust Stack 11UHN											
46	[3SS+200CW+8S]	18	23	33	38	42	47	48	45	47	*46*
	3mm stainless sheet+200mm ceramic wool + 8mm steel sheet										
137	[1SE]-barrier wall	0	3	5	7	11	16	20	16	15	*16*
	insertion loss value for a sound barier wall with 1mm thick trapezoidal steel sheet (11kg/m²)										
6	1 elbow	3	3	2	2	2	2	2	2	2	
	insertion loss values of 1 acoustical effective elbow										
51	0,25 x ES	1,25	2,875	7,775	9,425	10,43	12,38	14,13	14,35	14,13	*4*
	0,25 x dynamic insertion loss values of exhaust silencer (5 / 2,5 / 2 x 40) silencer dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length)										
48	3SST+150CW+6ST	25	30	25	39	47	55	53	52	49	*48*
	3mm stainless steel+150mm ceramic wool+6mm steel sheet										
50	E silencer	5	11,5	31,1	37,7	41,7	49,5	56,5	57,4	56,5	
	dynamic insertion loss values of exhaust silencer (5 / 2,5 / 2 x 40) silencer dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length)										
49	3SST+150CW+6ST	34	38	24	38	46	54	53	52	49	*47*
	3mm stainless steel+150mm ceramic wool+6mm steel sheet										
56	SRD+SRO	2,9	0,9	0,3	0,2	0,1	0,2	0,2	0,4	0,9	
	sound reduction through the stack duct & sound reflection at the stack outlet										
486	Cor6	-1	-1	-1	-1	-1	-1	-1	-1	-1	
	Correction factor 6										
102	DI 5	-2	-1	-1	-1	-2	-2	-1	-1	-1	
	directivity index values (from bypass exhaust stack; sm=1000m)										
98	DI 1	2	3	3	4	4	5	6	6	6	
	directivity index values (from bypass exhaust stack; sm=200m)										

Table 3 OCGT Eskom Mossel Bay 3xSGT5-2000
Transmission / Insertion Loss Values of Sound Protection Measures

		R [dB]									R'w
No.	Short name	32	63	125	250	500	1k	2k	4k	8kHz	dB
99	DI 2	2	2	3	2	3	4	5	5	5	
	directivity index values (from bypass exhaust stack; sm=300m)										
97	DI 0	2	3	4	5	7	8	8	8	8	
	directivity index values (from bypass exhaust stack; sm=120m)										
Lube Oil Coolers 11URC (MBV-System)											
Forced Cooling Water Cooler 11URB (MPR-System)											
Transformers 11BAT/BBT/BFT											
Power Control Centers 11UBA01-02											
Unidentified Noise Sources Unit 11											
Gas Turbine Package 12UMB											
249	0,6(S/MW/TS)	2	8	14	20	30	41	43	44	45	*32*
	0,6mm sheet steel (splices should be overlapped and should be sealed with rubber joint) + 50mm mineral wool + 0,6mm trapezoidal steel sheet										
287	steel s. gate	2	6	8	12	14	15	18	23	23	*16*
	steel sheet gate with sealings										
292	[SL 2/1/5]	0	2	3	8	16	26	19	14	10	
	sound absorption slencer (2 / 1 / 5); manufacturer: G & H dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length										
293	[SL 2/1/7,5]	0	2	5	11	22	34	26	18	12	
	sound absorption slencer (2 / 1 / 7,5); manufacturer: G & H dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length										
Gas Turbine Filterhouse 12MBL											
163	[S/120MW/S]	26	28	40	50	51	64	64	64	58	*58*
	2mm steel sheet with acoustic layers + 120mm mineral wool + 2mm steel sheet glued together with 6mm steel sheet (3mm adhesive layer between them)										
6	1 elbow	3	3	2	2	2	2	2	2	2	
	insertion loss values of 1 acoustical effective elbow										
27	0,25 x AIS	0,45	1,125	3,175	9	14,18	14,98	15	13,48	4,875	
	0,25 x dynamic insertion loss values of air intake slencer (2,5 / 1,25 / 1 x 23) silencer dimensions in [dm]: baffle thickness / space betw. the baffles / baffle-length)										
28	2 x filter	0	0	0	0	2	6	13	15	11	
	2 x rows of filters										
26	AI silencer	1,8	4,5	12,7	36	56,7	59,9	60	53,9	19,5	
	dynamic insertion loss values of air intake slencer (2,5 / 1,25 / 1 x 23) silencer dimensions in [dm]: baffle thickness / space betw. the baffles / baffle-length)										
Gas Turbine Diffuser Extension Duct 12MBR											
42	3 ST/150/10 ST	47	43	39	37	39	47	51	53	52	*45*
	3mm thick stainless steel, 150mm thick mats of ceramic wool, 10mm thick sheet steel										
58	insertion loss value SBW	-2	-0,5	1,5	4	6,5	9	10	10	10	
	insertion loss value caused by the SBW for 1100m distance (8m height)										
Exhaust Stack 12UHN											
46	[3SS+200CW+8S]	18	23	33	38	42	47	48	45	47	*46*
	3mm stainless sheet+200mm ceramic wool + 8mm steel sheet										
137	[1SE]-barrier wall	0	3	5	7	11	16	20	16	15	*16*
	insertion loss value for a sound barier wall with 1mm thick trapezoidal steel sheet (11kg/m²)										
6	1 elbow	3	3	2	2	2	2	2	2	2	
	insertion loss values of 1 acoustical effective elbow										
51	0,25 x ES	1,25	2,875	7,775	9,425	10,43	12,38	14,13	14,35	14,13	*4*
	0,25 x dynamic insertion loss values of exhaust silencer (5 / 2,5 / 2 x 40) silencer dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length)										
48	3SST+150CW+6ST	25	30	25	39	47	55	53	52	49	*48*
	3mm stainless steel+150mm ceramic wool+6mm steel sheet										
50	E silencer	5	11,5	31,1	37,7	41,7	49,5	56,5	57,4	56,5	
	dynamic insertion loss values of exhaust silencer (5 / 2,5 / 2 x 40) silencer dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length)										

Table 3 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Transmission / Insertion Loss Values of Sound Protection Measures

		R [dB]									R'w
No.	Short name	32	63	125	250	500	1k	2k	4k	8kHz	dB
49	3SST+150CW+6ST	34	38	24	38	46	54	53	52	49	*47*
	3mm stainless steel+150mm ceramic wool+6mm steel sheet										
56	SRD+SRO	2,9	0,9	0,3	0,2	0,1	0,2	0,2	0,4	0,9	
	sound reduction through the stack duct & sound reflection at the stack outlet										
486	Cor6	-1	-1	-1	-1	-1	-1	-1	-1	-1	
	Correction factor 6										
102	DI 5	-2	-1	-1	-1	-2	-2	-1	-1	-1	
	directivity index values (from bypass exhaust stack; sm=1000m)										
98	DI 1	2	3	3	4	4	5	6	6	6	
	directivity index values (from bypass exhaust stack; sm=200m)										
99	DI 2	2	2	3	2	3	4	5	5	5	
	directivity index values (from bypass exhaust stack; sm=300m)										
97	DI 0	2	3	4	5	7	8	8	8	8	
	directivity index values (from bypass exhaust stack; sm=120m)										
Lube Oil Coolers 12URC (MBV-System)											
Forced Cooling Water Cooler 12URB (MPR-System)											
Transformers 12BAT/BBT/BFT											
Power Control Centers 12UBA01-02											
Unidentified Noise Sources Unit 12											
Gas Turbine Package 13UMB											
249	0,6(S/MW/TS)	2	8	14	20	30	41	43	44	45	*32*
	0,6mm sheet steel (splices should be overlapped and should be sealed with rubber joint) + 50mm mineral wool + 0,6mm trapezoidal steel sheet										
287	steel s. gate	2	6	8	12	14	15	18	23	23	*16*
	steel sheet gate with sealings										
292	[SL 2/1/5]	0	2	3	8	16	26	19	14	10	
	sound absorption slencer (2 / 1 / 5); manufacturer: G & H dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length										
293	[SL 2/1/7,5]	0	2	5	11	22	34	26	18	12	
	sound absorption slencer (2 / 1 / 7,5); manufacturer: G & H dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length										
Gas Turbine Filterhouse 13MBL											
163	[S/120MW/S]	26	28	40	50	51	64	64	64	58	*58*
	2mm steel sheet with acoustic layers + 120mm mineral wool + 2mm steel sheet glued together with 6mm steel sheet (3mm adhesive layer between them)										
6	1 elbow	3	3	2	2	2	2	2	2	2	
	insertion loss values of 1 acoustical effective elbow										
27	0,25 x AIS	0,45	1,125	3,175	9	14,18	14,98	15	13,48	4,875	
	0,25 x dynamic insertion loss values of air intake slencer (2,5 / 1,25 / 1 x 23) silencer dimensions in [dm]: baffle thickness / space betw. the baffles / baffle-length)										
28	2 x filter	0	0	0	0	2	6	13	15	11	
	2 x rows of filters										
26	AI silencer	1,8	4,5	12,7	36	56,7	59,9	60	53,9	19,5	
	dynamic insertion loss values of air intake slencer (2,5 / 1,25 / 1 x 23) silencer dimensions in [dm]: baffle thickness / space betw. the baffles / baffle-length)										
Gas Turbine Diffuser Extension Duct 13MBR											
42	3 ST/150/10 ST	47	43	39	37	39	47	51	53	52	*45*
	3mm thick stainless steel, 150mm thick mats of ceramic wool, 10mm thick sheet steel										
58	insertion loss value SBW	-2	-0,5	1,5	4	6,5	9	10	10	10	
	insertion loss value caused by the SBW for 1100m distance (8m height)										
Exhaust Stack 13UHN											
46	[3SS+200CW+8S]	18	23	33	38	42	47	48	45	47	*46*
	3mm stainless sheet+200mm ceramic wool + 8mm steel sheet										
137	[1SE]-barrier wall	0	3	5	7	11	16	20	16	15	*16*
	insertion loss value for a sound barier wall with 1mm thick trapezoidal steel sheet (11kg/m²)										

Table 3 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Transmission / Insertion Loss Values of Sound Protection Measures

		R [dB]									R'$_w$
No.	Short name	32	63	125	250	500	1k	2k	4k	8kHz	dB
6	1 elbow	3	3	2	2	2	2	2	2	2	
	insertion loss values of 1 acoustical effective elbow										
51	0,25 x ES	1,25	2,875	7,775	9,425	10,43	12,38	14,13	14,35	14,13	*4*
	0,25 x dynamic insertion loss values of exhaust silencer (5 / 2,5 / 2 x 40)										
	silencer dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length)										
48	3SST+150CW+6ST	25	30	25	39	47	55	53	52	49	*48*
	3mm stainless steel+150mm ceramic wool+6mm steel sheet										
50	E silencer	5	11,5	31,1	37,7	41,7	49,5	56,5	57,4	56,5	
	dynamic insertion loss values of exhaust silencer (5 / 2,5 / 2 x 40)										
	silencer dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length)										
49	3SST+150CW+6ST	34	38	24	38	46	54	53	52	49	*47*
	3mm stainless steel+150mm ceramic wool+6mm steel sheet										
56	SRD+SRO	2,9	0,9	0,3	0,2	0,1	0,2	0,2	0,4	0,9	
	sound reduction through the stack duct & sound reflection at the stack outlet										
486	Cor6	-1	-1	-1	-1	-1	-1	-1	-1	-1	
	Correction factor 6										
102	DI 5	-2	-1	-1	-1	-2	-2	-1	-1	-1	
	directivity index values (from bypass exhaust stack; sm=1000m)										
98	DI 1	2	3	3	4	4	5	6	6	6	
	directivity index values (from bypass exhaust stack; sm=200m)										
99	DI 2	2	2	3	2	3	4	5	5	5	
	directivity index values (from bypass exhaust stack; sm=300m)										
97	DI 0	2	3	4	5	7	8	8	8	8	
	directivity index values (from bypass exhaust stack; sm=120m)										
Lube Oil Coolers 13URC (MBV-System)											
Forced Cooling Water Cooler 13URB (MPR-System)											
Transformers 13BAT/BBT/BFT											
Power Control Centers 13UBA01-02											
Unidentified Noise Sources Unit 13											
Control Room Building 00UCA/UBA (Clients Scope of Supply)											
292	[SL 2/1/5]	0	2	3	8	16	26	19	14	10	
	sound absorption slencer (2 / 1 / 5); manufacturer: G & H										
	dimensions in [dm]: baffle-thickness / space betw. the baffles / baffle-length										
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)											

Table4 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Sound Power Levels emitted to the Environment

A-weighted octave band sound power level [dB(A)]																
Noise source			Spectrum			Trans./Insert.loss				Coordinates			Num-	Surface	diff	L_{WA}
32	63	125	250	500	1k	2k	4k	8kHz		x[m]	y[m]	h[m]	ber	[m²]	[dB]	[dB(A)]
Gas Turbine Package 11UMB																
wall N			SPL ins. UMB			0,6(S/MW/TS)				-5	51	7	1	252	-6	*93*
76	86	87	88	82	73	70	64	56								
wall E			SPL ins. UMB			0,6(S/MW/TS)				7	33	7	1	378	-6	*94*
77	88	89	90	84	75	72	66	58								
wall S			SPL ins. UMB			0,6(S/MW/TS)				-5	15	7	1	252	-6	*93*
76	86	87	88	82	73	70	64	56								
wall W			SPL ins. UMB			0,6(S/MW/TS)				-17	33	7	1	378	-6	*94*
77	88	89	90	84	75	72	66	58								
roof			SPL ins. UMB			0,6(S/MW/TS)				-5	33	10,5	1	864	-6	*98*
81	91	93	93	88	78	75	70	61								
gate E			SPL ins. UMB			steel s. gate				7	33	7	1	9	-6	*90*
61	74	79	82	84	85	80	71	64								
gate W			SPL ins. UMB			steel s. gate				-17	31	7	1	9	-6	*90*
61	74	79	82	84	85	80	71	64								
doors			SPL ins. UMB			steel s. gate				-5	33	7	1	8	-6	*89*
61	73	78	81	83	84	80	70	63								
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]				-4	51	2	1	2,25	-6	*84*
57	72	78	80	76	68	73	74	71								
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]				7	33	2	3	6,25	-6	*94*
66	81	87	89	85	77	83	83	80								
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]				-9	15	2	1	6,25	-6	*89*
62	76	82	84	80	72	78	78	75								
air exh. Unit N			House, Fan			[SL 2/1/7,5]				6	56	1,5	1			*85*
65	75	81	81	73	59	63	65	63								
air exh. Units S			House, Fan			[SL 2/1/7,5]				8	11	1,5	2			*88*
68	78	84	84	76	62	66	68	66								
Gas Turbine Package 11UMB																
85	**96**	**98**	**99**	**94**	**90**	**88**	**85**	**82**								***104***
Gas Turbine Filterhouse 11MBL																
EB casing			GT compr. ait.			[S/120MW/S]				0	26	13	1	3,16		*92*
61	69	68	67	79	82	90	83	78								
SL casing			GT compr. ait.			1 elbow				0	28	14,5	1	1,803		*75*
						0,25 x AIS + [S/120MW/S]										
55	62	60	54	60	63	71	65	69								
FHA intakes			GT compr. ait.			1 elbow				0	36	16	1			*99*
						2 x filter + AI silencer										
77	84	88	74	64	73	74	71	98								
Gas Turbine Filterhouse 11MBL																
77	**84**	**88**	**75**	**79**	**83**	**90**	**83**	**98**								***100***
Gas Turbine Diffuser Extension Duct 11MBR																
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST				0	10	3	1	10,67		*106*
						insertion loss value SBW										
67	86	93	97	102	98	99	94	87								
Gas Turbine Diffuser Extension Duct 11MBR																
67	**86**	**93**	**97**	**102**	**98**	**99**	**94**	**87**								***106***
Exhaust Stack 11UHN																
LS part			GT diff. exh.			[3SS+200CW+8S]				0	0	8,5	1	7,429		*104*
						[1SE]-barrier wall										
92	101	94	91	93	90	91	95	86								
SL casing			GT diff. exh.			1 elbow				0	0	16	1	4,571		*97*
						0,25 x ES + 3SST+150CW+6ST										
79	89	95	84	84	81	88	85	80								

Table4 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Sound Power Levels emitted to the Environment

A-weighted octave band sound power level [dB(A)]																	
Noise source			Spectrum			Trans./Insert.loss				Coordinates			Num-	Surface	diff		L_{WA}
32	63	125	250	500	1k	2k	4k	8kHz		x[m]	y[m]	h[m]	ber	[m²]	[dB]		[dB(A)]
outlet duct			GT diff. exh.			1 elbow				0	0	26	1	8			*78*
						E silencer + 3SST+150CW+6ST											
69	74	75	59	56	48	48	45	40									
stack outlet			GT diff. exh.			1 elbow				0	0	30	1				*105*
						E silencer + SRD+SRO + Cor6											
92	103	91	89	94	93	93	88	81									
Exhaust Stack 11UHN																	
95	**105**	**98**	**93**	**97**	**95**	**96**	**96**	**88**									***108***
Lube Oil Coolers 11URC (MBV-System)																	
FFC air int.			LOC air int.							-15	4	2	3				*95*
52	68	80	88	89	88	87	85	82									
FFC air outl.			LOC air outl.							-15	4	3,5	3				*97*
54	70	82	90	91	90	89	87	84									
Lube Oil Coolers 11URC (MBV-System)																	
57	**72**	**84**	**92**	**93**	**92**	**91**	**89**	**86**									***99***
Forced Cooling Water Cooler 11URB (MPR-System)																	
FFC air int.			LOC air int.							-15	-11	2	8				*99*
57	72	84	92	93	92	91	89	86									
FFC air outl.			LOC air outl.							-15	-11	4,5	8				*101*
59	74	86	94	95	94	93	91	88									
Forced Cooling Water Cooler 11URB (MPR-System)																	
61	**76**	**88**	**97**	**97**	**96**	**95**	**93**	**90**									***103***
Transformers 11BAT/BBT/BFT																	
11BAT TF UBF			GT gen. transf.							-12	75	3	1				*100*
40	63	87	93	96	94	88	84	72									
11BBT TF UBE			UBE transf.							-12	66	2	1				*85*
24	51	76	82	76	77	71	63	50									
11BFT TFUBD			UBD transf.							-10	56	1,5	2				*81*
23	47	72	78	72	73	67	59	46									
Transformers 11BAT/BBT/BFT																	
40	**63**	**87**	**94**	**96**	**94**	**88**	**84**	**72**									***100***
Power Control Centers 11UBA01-02																	
11UBA, ACU			UBA, ACU							-11	47	3	2				*87*
52	64	73	80	82	81	77	71	62									
Power Control Centers 11UBA01-02																	
52	**64**	**73**	**80**	**82**	**81**	**77**	**71**	**62**									***87***
Unidentified Noise Sources Unit 11																	
UIF-NC			UIF-NC							-5	27	10	1				*110*
85	98	103	106	103	100	95	89	83									
Unidentified Noise Sources Unit 11																	
85	**98**	**103**	**106**	**103**	**100**	**95**	**89**	**83**									***110***
Gas Turbine Package 12UMB																	
wall N			SPL ins. UMB			0,6(S/MW/TS)				35	51	7	1	252	-6		*93*
76	86	87	88	82	73	70	64	56									
wall E			SPL ins. UMB			0,6(S/MW/TS)				47	33	7	1	378	-6		*94*
77	88	89	90	84	75	72	66	58									
wall S			SPL ins. UMB			0,6(S/MW/TS)				35	15	7	1	252	-6		*93*
76	86	87	88	82	73	70	64	56									
wall W			SPL ins. UMB			0,6(S/MW/TS)				23	33	7	1	378	-6		*94*
77	88	89	90	84	75	72	66	58									
roof			SPL ins. UMB			0,6(S/MW/TS)				35	33	10,5	1	864	-6		*98*
81	91	93	93	88	78	75	70	61									
gate E			SPL ins. UMB			steel s. gate				47	33	7	1	9	-6		*90*
61	74	79	82	84	85	80	71	64									

Table4 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Sound Power Levels emitted to the Environment

A-weighted octave band sound power level [dB(A)]																
Noise source			Spectrum			Trans./Insert.loss			Coordinates			Num-	Surface	diff	L_{WA}
32	63	125	250	500	1k	2k	4k	8kHz	x[m]	y[m]	h[m]	ber	[m²]	[dB]	[dB(A)]
gate W			SPL ins. UMB			steel s. gate			23	31	7	1	9	-6	*90*
61	74	79	82	84	85	80	71	64							
doors			SPL ins. UMB			steel s. gate			35	33	7	1	8	-6	*89*
61	73	78	81	83	84	80	70	63							
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			36	51	2	1	2,25	-6	*84*
57	72	78	80	76	68	73	74	71							
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			47	33	2	3	6,25	-6	*94*
66	81	87	89	85	77	83	83	80							
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			31	15	2	1	6,25	-6	*89*
62	76	82	84	80	72	78	78	75							
air exh. Unit N			House, Fan			[SL 2/1/7,5]			46	56	1,5	1			*85*
65	75	81	81	73	59	63	65	63							
air exh. Units S			House, Fan			[SL 2/1/7,5]			48	11	1,5	2			*88*
68	78	84	84	76	62	66	68	66							
Gas Turbine Package 12UMB															
85	**96**	**98**	**99**	**94**	**90**	**88**	**85**	**82**							***104***
Gas Turbine Filterhouse 12MBL															
EB casing			GT compr. ait.			[S/120MW/S]			40	26	13	1	3,16		*92*
61	69	68	67	79	82	90	83	78							
SL casing			GT compr. ait.			1 elbow			40	28	14,5	1	1,803		*75*
						0,25 x AIS + [S/120MW/S]									
55	62	60	54	60	63	71	65	69							
FHA intakes			GT compr. ait.			1 elbow			40	36	16	1			*99*
						2 x filter + AI silencer									
77	84	88	74	64	73	74	71	98							
Gas Turbine Filterhouse 12MBL															
77	**84**	**88**	**75**	**79**	**83**	**90**	**83**	**98**							***100***
Gas Turbine Diffuser Extension Duct 12MBR															
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			40	10	3	1	10,67		*106*
						insertion loss value SBW									
67	86	93	97	102	98	99	94	87							
Gas Turbine Diffuser Extension Duct 12MBR															
67	**86**	**93**	**97**	**102**	**98**	**99**	**94**	**87**							***106***
Exhaust Stack 12UHN															
LS part			GT diff. exh.			[3SS+200CW+8S]			40	0	8,5	1	7,429		*104*
						[1SE]-barrier wall									
92	101	94	91	93	90	91	95	86							
SL casing			GT diff. exh.			1 elbow			40	0	16	1	4,571		*97*
						0,25 x ES + 3SST+150CW+6ST									
79	89	95	84	84	81	88	85	80							
outlet duct			GT diff. exh.			1 elbow			40	0	26	1	8		*78*
						E silencer + 3SST+150CW+6ST									
69	74	75	59	56	48	48	45	40							
stack outlet			GT diff. exh.			1 elbow			40	0	30	1			*105*
						E silencer + SRD+SRO + Cor6									
92	103	91	89	94	93	93	88	81							
Exhaust Stack 12UHN															
95	**105**	**98**	**93**	**97**	**95**	**96**	**96**	**88**							***108***
Lube Oil Coolers 12URC (MBV-System)															
FFC air int.			LOC air int.						25	4	2	3			*95*
52	68	80	88	89	88	87	85	82							
FFC air outl.			LOC air outl.						25	4	3,5	3			*97*
54	70	82	90	91	90	89	87	84							

Table4 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Sound Power Levels emitted to the Environment

A-weighted octave band sound power level [dB(A)]																	
Noise source			Spectrum			Trans./Insert.loss				Coordinates			Num-	Surface	diff	L_{WA}
32	63	125	250	500	1k	2k	4k	8kHz		x[m]	y[m]	h[m]	ber	[m²]	[dB]	[dB(A)]
Lube Oil Coolers 12URC (MBV-System)																
57	**72**	**84**	**92**	**93**	**92**	**91**	**89**	**86**								***99***
Forced Cooling Water Cooler 12URB (MPR-System)																
FFC air int.			LOC air int.							25	-11	2	8			*99*
57	72	84	92	93	92	91	89	86								
FFC air outl.			LOC air outl.							25	-11	4,5	8			*101*
59	74	86	94	95	94	93	91	88								
Forced Cooling Water Cooler 12URB (MPR-System)																
61	**76**	**88**	**97**	**97**	**96**	**95**	**93**	**90**								***103***
Transformers 12BAT/BBT/BFT																
12BAT TF UBF			GT gen. transf.							28	75	3	1			*100*
40	63	87	93	96	94	88	84	72								
12BBT TF UBE			UBE transf.							28	66	2	1			*85*
24	51	76	82	76	77	71	63	50								
12BFT TFUBD			UBD transf.							30	56	1,5	2			*81*
23	47	72	78	72	73	67	59	46								
Transformers 12BAT/BBT/BFT																
40	**63**	**87**	**94**	**96**	**94**	**88**	**84**	**72**								***100***
Power Control Centers 12UBA01-02																
12UBA, ACU			UBA, ACU							29	47	3	2			*87*
52	64	73	80	82	81	77	71	62								
Power Control Centers 12UBA01-02																
52	**64**	**73**	**80**	**82**	**81**	**77**	**71**	**62**								***87***
Unidentified Noise Sources Unit 12																
UIF-NC			UIF-NC							35	27	10	1			*110*
85	98	103	106	103	100	95	89	83								
Unidentified Noise Sources Unit 12																
85	**98**	**103**	**106**	**103**	**100**	**95**	**89**	**83**								***110***
Gas Turbine Package 13UMB																
wall N			SPL ins. UMB			0,6(S/MW/TS)				75	51	7	1	252	-6	*93*
76	86	87	88	82	73	70	64	56								
wall E			SPL ins. UMB			0,6(S/MW/TS)				87	33	7	1	378	-6	*94*
77	88	89	90	84	75	72	66	58								
wall S			SPL ins. UMB			0,6(S/MW/TS)				75	15	7	1	252	-6	*93*
76	86	87	88	82	73	70	64	56								
wall W			SPL ins. UMB			0,6(S/MW/TS)				63	33	7	1	378	-6	*94*
77	88	89	90	84	75	72	66	58								
roof			SPL ins. UMB			0,6(S/MW/TS)				75	33	10,5	1	864	-6	*98*
81	91	93	93	88	78	75	70	61								
gate E			SPL ins. UMB			steel s. gate				87	33	7	1	9	-6	*90*
61	74	79	82	84	85	80	71	64								
gate W			SPL ins. UMB			steel s. gate				63	31	7	1	9	-6	*90*
61	74	79	82	84	85	80	71	64								
doors			SPL ins. UMB			steel s. gate				75	33	7	1	8	-6	*89*
61	73	78	81	83	84	80	70	63								
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]				76	51	2	1	2,25	-6	*84*
57	72	78	80	76	68	73	74	71								
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]				87	33	2	3	6,25	-6	*94*
66	81	87	89	85	77	83	83	80								
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]				71	15	2	1	6,25	-6	*89*
62	76	82	84	80	72	78	78	75								
air exh. Unit N			House, Fan			[SL 2/1/7,5]				86	56	1,5	1			*85*
65	75	81	81	73	59	63	65	63								

Table4 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Sound Power Levels emitted to the Environment

A-weighted octave band sound power level [dB(A)]															
Noise source			Spectrum			Trans./Insert.loss			Coordinates			Num-	Surface	diff	L_{WA}
32	63	125	250	500	1k	2k	4k	8kHz	x[m]	y[m]	h[m]	ber	[m²]	[dB]	[dB(A)]
air exh. Units S			House, Fan			[SL 2/1/7,5]			88	11	1,5	2			*88*
68	78	84	84	76	62	66	68	66							
Gas Turbine Package 13UMB															
85	**96**	**98**	**99**	**94**	**90**	**88**	**85**	**82**							***104***
Gas Turbine Filterhouse 13MBL															
EB casing			GT compr. ait.			[S/120MW/S]			80	26	13	1	3,16		*92*
61	69	68	67	79	82	90	83	78							
SL casing			GT compr. ait.			1 elbow			80	28	14,5	1	1,803		*75*
						0,25 x AIS + [S/120MW/S]									
55	62	60	54	60	63	71	65	69							
FHA intakes			GT compr. ait.			1 elbow			80	36	16	1			*99*
						2 x filter + AI silencer									
77	84	88	74	64	73	74	71	98							
Gas Turbine Filterhouse 13MBL															
77	**84**	**88**	**75**	**79**	**83**	**90**	**83**	**98**							***100***
Gas Turbine Diffuser Extension Duct 13MBR															
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			80	10	3	1	10,67		*106*
						insertion loss value SBW									
67	86	93	97	102	98	99	94	87							
Gas Turbine Diffuser Extension Duct 13MBR															
67	**86**	**93**	**97**	**102**	**98**	**99**	**94**	**87**							***106***
Exhaust Stack 13UHN															
LS part			GT diff. exh.			[3SS+200CW+8S]			80	0	8,5	1	7,429		*104*
						[1SE]-barrier wall									
92	101	94	91	93	90	91	95	86							
SL casing			GT diff. exh.			1 elbow			80	0	16	1	4,571		*97*
						0,25 x ES + 3SST+150CW+6ST									
79	89	95	84	84	81	88	85	80							
outlet duct			GT diff. exh.			1 elbow			80	0	26	1	8		*78*
						E silencer + 3SST+150CW+6ST									
69	74	75	59	56	48	48	45	40							
stack outlet			GT diff. exh.			1 elbow			80	0	30	1			*105*
						E silencer + SRD+SRO + Cor6									
92	103	91	89	94	93	93	88	81							
Exhaust Stack 13UHN															
95	**105**	**98**	**93**	**97**	**95**	**96**	**96**	**88**							***108***
Lube Oil Coolers 13URC (MBV-System)															
FFC air int.			LOC air int.						65	4	2	3			*95*
52	68	80	88	89	88	87	85	82							
FFC air outl.			LOC air outl.						65	4	3,5	3			*97*
54	70	82	90	91	90	89	87	84							
Lube Oil Coolers 13URC (MBV-System)															
57	**72**	**84**	**92**	**93**	**92**	**91**	**89**	**86**							***99***
Forced Cooling Water Cooler 13URB (MPR-System)															
FFC air int.			LOC air int.						65	-11	2	8			*99*
57	72	84	92	93	92	91	89	86							
FFC air outl.			LOC air outl.						65	-11	4,5	8			*101*
59	74	86	94	95	94	93	91	88							
Forced Cooling Water Cooler 13URB (MPR-System)															
61	**76**	**88**	**97**	**97**	**96**	**95**	**93**	**90**							***103***
Transformers 13BAT/BBT/BFT															
13BAT TF UBF			GT gen. transf.						68	75	3	1			*100*
40	63	87	93	96	94	88	84	72							

Table4 **OCGT Eskom Mossel Bay 3xSGT5-2000**
Sound Power Levels emitted to the Environment

A-weighted octave band sound power level [dB(A)]																
Noise source			Spectrum			Trans./Insert.loss				Coordinates			Num-	Surface	diff	L_{WA}
32	63	125	250	500	1k	2k	4k	8kHz		x[m]	y[m]	h[m]	ber	[m²]	[dB]	[dB(A)]
13BBT TF UBE			UBE transf.							68	66	2	1			*85*
24	51	76	82	76	77	71	63	50								
13BFT TFUBD			UBD transf.							70	56	1,5	2			*81*
23	47	72	78	72	73	67	59	46								
Transformers 13BAT/BBT/BFT																
40	**63**	**87**	**94**	**96**	**94**	**88**	**84**	**72**								***100***
Power Control Centers 13UBA01-02																
13UBA, ACU			UBA, ACU							69	47	3	2			*87*
52	64	73	80	82	81	77	71	62								
Power Control Centers 13UBA01-02																
52	**64**	**73**	**80**	**82**	**81**	**77**	**71**	**62**								***87***
Unidentified Noise Sources Unit 13																
UIF-NC			UIF-NC							75	27	10	1			*110*
85	98	103	106	103	100	95	89	83								
Unidentified Noise Sources Unit 13																
85	**98**	**103**	**106**	**103**	**100**	**95**	**89**	**83**								***110***
Control Room Building 00UCA/UBA (Clients Scope of Supply)																
ACSCU 1			ACSCU			[SL 2/1/5]				-35	51	4	2			*84*
52	65	75	80	77	69	72	75	71								
ACSCU 2			ACSCU			[SL 2/1/5]				-35	51	4	4			*87*
55	68	78	83	80	72	75	78	74								
ACSCU 3			ACSCU			[SL 2/1/5]				-35	51	4	2			*84*
52	65	75	80	77	69	72	75	71								
RFG unit			HVAC RFU			[SL 2/1/5]				-35	51	1,5	2			*88*
63	61	66	73	70	76	85	84	77								
Control Room Building 00UCA/UBA (Clients Scope of Supply)																
64	**71**	**81**	**86**	**83**	**79**	**86**	**86**	**80**								***92***
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																
fuel oil transfer pun			FOTF pump							-140	5	1,5	1	70,79		*99*
39	63	81	88	92	94	92	90	78								
fuel oil forwarding p			FOFW pump							-140	5	1,5	1	70,79		*99*
34	65	83	86	90	93	93	92	85								
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																
40	**67**	**86**	**90**	**94**	**96**	**95**	**94**	**86**								***102***
overall level																
101	**111**	**110**	**113**	**112**	**110**	**109**	**106**	**105**								***119***

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP1 @1100m north x=40m y=1194m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																				
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
Gas Turbine Package 11UMB																				
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1144	4,7	252	-6		6			*21*
5	15	16	16	7	-12	-33	-50	-71											
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1161	4,7	378	-6		6			*22*
6	17	18	18	9	-10	-32	-49	-70											
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1180	4,7	252	-6		-14			*1*
-16	-5	-4	-4	-13	-32	-54	-72	-93											
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1162	4,7	378	-6		1			*17*
1	12	13	13	4	-15	-37	-54	-75											
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1162	4,6	864	-6		0			*20*
4	14	15	15	6	-13	-34	-51	-72											
gate E			SPL ins. UMB			steel s. gate			1	1161	4,7	9	-6		6			*14*
-10	2	8	9	8	0	-23	-44	-64											
gate W			SPL ins. UMB			steel s. gate			1	1164	4,7	9	-6		1			*9*
-15	-3	3	4	3	-5	-28	-49	-69											
doors			SPL ins. UMB			steel s. gate			1	1162	4,7	8	-6		6			*13*
-10	2	7	9	8	-1	-24	-45	-65											
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1144	4,7	2,25	-6		6			*11*
-14	1	7	7	0	-17	-30	-41	-56											
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1161	4,7	6,25	-6		6			*20*
-5	10	16	16	9	-8	-21	-32	-48											
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1180	4,7	6,25	-6		-14			*-5*
-30	-15	-9	-8	-16	-33	-46	-58	-74											
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1139	4,8				6			*13*
-6	4	10	9	-3	-26	-40	-49	-64											
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1183	4,8				5			*15*
-5	5	11	11	-1	-25	-39	-49	-64											
Gas Turbine Package 11UMB																			
11	**22**	**24**	**24**	**17**	**4**	**-17**	**-31**	**-47**											***28***
Gas Turbine Filterhouse 11MBL																			
EB casing			GT compr. ait.			[S/120MW/S]			1	1169	4,6	3,16			3			*3*
-13	-5	-6	-8	0	-6	-16	-35	-53											
SL casing			GT compr. ait.			1 elbow			1	1167	4,6	1,803			3			*-8*
						0,25 x AIS + [S/120MW/S]													
-19	-12	-14	-21	-18	-25	-36	-53	-62											
FHA intakes			GT compr. ait.			1 elbow			1	1159	4,5				6			*19*
						2 x filter + AI silencer													
6	13	17	2	-11	-12	-29	-44	-29											
Gas Turbine Filterhouse 11MBL																			
6	**13**	**17**	**3**	**1**	**-5**	**-16**	**-35**	**-29**											***19***
Gas Turbine Diffuser Extension Duct 11MBR																			
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1185	4,7	10,67			1			*24*
						insertion loss value SBW													
-9	9	16	19	21	8	-10	-27	-47											
Gas Turbine Diffuser Extension Duct 11MBR																			
-9	**9**	**16**	**19**	**21**	**8**	**-10**	**-27**	**-47**											***24***
Exhaust Stack 11UHN																			
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1195	4,7	7,429			3			*28*
						[1SE]-barrier wall													
18	26	19	16	14	1	-17	-25	-47											
SL casing			GT diff. exh.			1 elbow			1	1195	4,5	4,571			3			*22*
						0,25 x ES + 3SST+150CW+6ST													
5	14	20	8	5	-7	-20	-34	-52											

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP1 @1100m north x=40m y=1194m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																		
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
outlet duct			GT diff. exh.			1 elbow			1	1195	4,4	8			3			*4*
						E silencer + 3SST+150CW+6ST												
-5	0	0	-17	-23	-41	-60	-75	-92										
stack outlet			GT diff. exh.			1 elbow			1	1195	4,3				0			*28*
						E silencer + SRD+SRO + Cor6									DI 5			
17	27	14	11	14	4	-17	-33	-54										
Exhaust Stack 11UHN																		
21	**30**	**23**	**17**	**17**	**6**	**-13**	**-24**	**-45**										***32***
Lube Oil Coolers 11URC (MBV-System)																		
FFC air int.			LOC air int.						3	1191	4,7				3			*15*
-22	-7	5	13	10	-1	-21	-35	-51										
FFC air outl.			LOC air outl.						3	1191	4,7				0			*14*
-23	-8	4	12	9	-2	-22	-36	-52										
Lube Oil Coolers 11URC (MBV-System)																		
-19	**-4**	**8**	**15**	**12**	**2**	**-18**	**-32**	**-48**										***18***
Forced Cooling Water Cooler 11URB (MPR-System)																		
FFC air int.			LOC air int.						8	1206	4,7				3			*19*
-18	-3	9	17	14	3	-17	-31	-48										
FFC air outl.			LOC air outl.						8	1206	4,7				0			*18*
-19	-4	8	16	13	2	-18	-32	-49										
Forced Cooling Water Cooler 11URB (MPR-System)																		
-15	**0**	**12**	**19**	**16**	**6**	**-14**	**-29**	**-45**										***22***
Transformers 11BAT/BBT/BFT																		
11BAT TF UBF			GT gen. transf.						1	1120	4,7				9			*28*
-28	-5	19	24	24	13	-11	-26	-51										
11BBT TF UBE			UBE transf.						1	1129	4,7				6			*12*
-47	-20	5	10	1	-7	-31	-51	-76										
11BFT TFUBD			UBD transf.						2	1139	4,8				6			*8*
-48	-24	1	6	-4	-12	-36	-55	-81										
Transformers 11BAT/BBT/BFT																		
-28	**-5**	**19**	**25**	**24**	**13**	**-11**	**-26**	**-51**										***28***
Power Control Centers 11UBA01-02																		
11UBA, ACU			UBA, ACU						2	1148	4,7				6			*11*
-19	-7	2	8	7	-4	-26	-44	-65										
Power Control Centers 11UBA01-02																		
-19	**-7**	**2**	**8**	**7**	**-4**	**-26**	**-44**	**-65**										***11***
Unidentified Noise Sources Unit 11																		
UIF-NC			UIF-NC						1	1168	4,6				3			*34*
11	24	29	31	24	12	-12	-29	-48										
Unidentified Noise Sources Unit 11																		
11	**24**	**29**	**31**	**24**	**12**	**-12**	**-29**	**-48**										***34***
Gas Turbine Package 12UMB																		
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1143	4,7	252	-6		6			*21*
5	15	16	16	7	-12	-33	-50	-71										
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1161	4,7	378	-6		6			*22*
6	17	18	18	9	-10	-32	-49	-70										
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1179	4,7	252	-6		-14			*1*
-15	-5	-4	-4	-13	-32	-54	-72	-93										
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1161	4,7	378	-6		1			*17*
1	12	13	13	4	-15	-37	-54	-75										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP1 @1100m north x=40m y=1194m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																				
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1161	4,6	864	-6		0			*20*
4	14	15	15	6	-13	-34	-51	-72										
gate E			SPL ins. UMB			steel s. gate			1	1161	4,7	9	-6		6			*14*
-10	3	8	9	8	0	-23	-44	-64										
gate W			SPL ins. UMB			steel s. gate			1	1163	4,7	9	-6		1			*9*
-15	-3	3	4	3	-5	-28	-49	-69										
doors			SPL ins. UMB			steel s. gate			1	1161	4,7	8	-6		6			*13*
-10	2	7	9	8	-1	-24	-45	-65										
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1143	4,7	2,25	-6		6			*11*
-14	1	7	7	0	-17	-30	-41	-56										
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1161	4,7	6,25	-6		6			*20*
-5	10	16	16	9	-8	-21	-32	-48										
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1179	4,7	6,25	-6		-14			*-5*
-30	-15	-9	-8	-16	-33	-46	-58	-74										
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1138	4,8				6			*13*
-6	4	10	9	-3	-26	-40	-49	-64										
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1183	4,8				5			*15*
-5	5	11	11	-1	-25	-39	-49	-64										
Gas Turbine Package 12UMB																		
11	**22**	**24**	**24**	**17**	**4**	**-17**	**-31**	**-47**										***28***
Gas Turbine Filterhouse 12MBL																		
EB casing			GT compr. ait.			[S/120MW/S]			1	1168	4,6	3,16			3			*3*
-13	-5	-6	-8	0	-6	-16	-35	-53										
SL casing			GT compr. ait.			1 elbow			1	1166	4,6	1,803			3			*-8*
						0,25 x AIS + [S/120MW/S]												
-19	-12	-14	-21	-18	-25	-36	-53	-62										
FHA intakes			GT compr. ait.			1 elbow			1	1158	4,5				6			*19*
						2 x filter + AI silencer												
6	13	17	2	-11	-12	-29	-44	-29										
Gas Turbine Filterhouse 12MBL																		
6	**13**	**17**	**3**	**1**	**-5**	**-16**	**-35**	**-29**										***19***
Gas Turbine Diffuser Extension Duct 12MBR																		
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1184	4,7	10,67			1			*24*
						insertion loss value SBW												
-9	9	16	19	21	8	-10	-27	-47										
Gas Turbine Diffuser Extension Duct 12MBR																		
-9	**9**	**16**	**19**	**21**	**8**	**-10**	**-27**	**-47**										***24***
Exhaust Stack 12UHN																		
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1194	4,7	7,429			3			*28*
						[1SE]-barrier wall												
18	26	19	16	14	1	-17	-25	-47										
SL casing			GT diff. exh.			1 elbow			1	1194	4,5	4,571			3			*22*
						0,25 x ES + 3SST+150CW+6ST												
5	14	20	8	5	-7	-20	-34	-52										
outlet duct			GT diff. exh.			1 elbow			1	1194	4,4	8			3			*4*
						E silencer + 3SST+150CW+6ST												
-5	0	0	-17	-23	-41	-60	-75	-92										
stack outlet			GT diff. exh.			1 elbow			1	1194	4,3				0			*28*
						E silencer + SRD+SRO + Cor6									DI 5			
17	27	14	11	14	4	-17	-33	-54										
Exhaust Stack 12UHN																		
21	**30**	**23**	**17**	**17**	**6**	**-13**	**-24**	**-45**										***32***

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP1 @1100m north x=40m y=1194m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum			Trans./Insert.loss				Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz		ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
Lube Oil Coolers 12URC (MBV-System)																			
FFC air int.			LOC air int.							3	1190	4,7				3			*15*
-22	-7	5	13	10	-1	-21	-35	-51											
FFC air outl.			LOC air outl.							3	1190	4,7				0			*14*
-23	-8	4	12	9	-2	-22	-36	-52											
Lube Oil Coolers 12URC (MBV-System)																			
-19	**-4**	**8**	**15**	**12**	**2**	**-18**	**-32**	**-48**											***18***
Forced Cooling Water Cooler 12URB (MPR-System)																			
FFC air int.			LOC air int.							8	1205	4,7				3			*19*
-18	-3	9	17	14	3	-17	-31	-47											
FFC air outl.			LOC air outl.							8	1205	4,7				0			*18*
-19	-4	8	16	13	2	-18	-32	-48											
Forced Cooling Water Cooler 12URB (MPR-System)																			
-15	**0**	**12**	**19**	**16**	**6**	**-14**	**-28**	**-45**											***22***
Transformers 12BAT/BBT/BFT																			
12BAT TF UBF			GT gen. transf.							1	1119	4,7				9			*28*
-28	-5	19	24	24	13	-11	-26	-51											
12BBT TF UBE			UBE transf.							1	1128	4,7				6			*12*
-47	-20	5	10	1	-7	-31	-51	-76											
12BFT TFUBD			UBD transf.							2	1138	4,8				6			*8*
-48	-24	1	6	-4	-12	-36	-55	-81											
Transformers 12BAT/BBT/BFT																			
-28	**-5**	**19**	**25**	**24**	**13**	**-11**	**-26**	**-51**											***28***
Power Control Centers 12UBA01-02																			
12UBA, ACU			UBA, ACU							2	1147	4,7				6			*11*
-19	-7	2	8	7	-4	-26	-44	-65											
Power Control Centers 12UBA01-02																			
-19	**-7**	**2**	**8**	**7**	**-4**	**-26**	**-44**	**-65**											***11***
Unidentified Noise Sources Unit 12																			
UIF-NC			UIF-NC							1	1167	4,6				3			*34*
11	24	29	31	24	12	-12	-29	-48											
Unidentified Noise Sources Unit 12																			
11	**24**	**29**	**31**	**24**	**12**	**-12**	**-29**	**-48**											***34***
Gas Turbine Package 13UMB																			
wall N			SPL ins. UMB			0,6(S/MW/TS)				1	1144	4,7	252	-6		6			*21*
5	15	16	16	7	-12	-33	-50	-71											
wall E			SPL ins. UMB			0,6(S/MW/TS)				1	1162	4,7	378	-6		6			*22*
6	17	18	18	9	-10	-32	-49	-70											
wall S			SPL ins. UMB			0,6(S/MW/TS)				1	1180	4,7	252	-6		-14			*1*
-16	-5	-4	-4	-13	-32	-54	-72	-93											
wall W			SPL ins. UMB			0,6(S/MW/TS)				1	1161	4,7	378	-6		1			*17*
1	12	13	13	4	-15	-37	-54	-75											
roof			SPL ins. UMB			0,6(S/MW/TS)				1	1162	4,6	864	-6		0			*20*
4	14	15	15	6	-13	-34	-51	-72											
gate E			SPL ins. UMB			steel s. gate				1	1162	4,7	9	-6		6			*14*
-10	2	8	9	8	0	-23	-44	-64											
gate W			SPL ins. UMB			steel s. gate				1	1163	4,7	9	-6		1			*9*
-15	-3	3	4	3	-5	-28	-49	-69											
doors			SPL ins. UMB			steel s. gate				1	1162	4,7	8	-6		6			*13*
-10	2	7	9	8	-1	-24	-45	-65											
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]				1	1144	4,7	2,25	-6		6			*11*
-14	1	7	7	0	-17	-30	-41	-56											

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP1 @1100m north x=40m y=1194m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k		2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
air suppl. op. E			SPL ins. UMB				[SL 2/1/5]			3	1162	4,7	6,25	-6		6			*20*
-5	10	16	16	9	-8		-21	-32	-48										
air suppl. op. S			SPL ins. UMB				[SL 2/1/5]			1	1179	4,7	6,25	-6		-14			*-5*
-30	-15	-9	-8	-16	-33		-46	-58	-74										
air exh. Unit N			House, Fan				[SL 2/1/7,5]			1	1139	4,8				6			*13*
-6	4	10	9	-3	-26		-40	-49	-64										
air exh. Units S			House, Fan				[SL 2/1/7,5]			2	1184	4,8				5			*15*
-5	5	11	11	-1	-25		-39	-49	-64										
Gas Turbine Package 13UMB																			
11	**22**	**24**	**24**	**17**	**4**		**-17**	**-31**	**-47**										***28***
Gas Turbine Filterhouse 13MBL																			
EB casing			GT compr. ait.				[S/120MW/S]			1	1169	4,6	3,16			3			*3*
-13	-5	-6	-8	0	-6		-16	-35	-53										
SL casing			GT compr. ait.				1 elbow			1	1167	4,6	1,803			3			*-8*
							0,25 x AIS + [S/120MW/S]												
-19	-12	-14	-21	-18	-25		-36	-53	-62										
FHA intakes			GT compr. ait.				1 elbow			1	1159	4,5				6			*19*
							2 x filter + AI silencer												
6	13	17	2	-11	-12		-29	-44	-29										
Gas Turbine Filterhouse 13MBL																			
6	**13**	**17**	**3**	**1**	**-5**		**-16**	**-35**	**-29**										***19***
Gas Turbine Diffuser Extension Duct 13MBR																			
diff. ext. duct			GT diff. exh.				3 ST/150/10 ST			1	1185	4,7	10,67			1			*24*
							insertion loss value SBW												
-9	9	16	19	21	8		-10	-27	-47										
Gas Turbine Diffuser Extension Duct 13MBR																			
-9	**9**	**16**	**19**	**21**	**8**		**-10**	**-27**	**-47**										***24***
Exhaust Stack 13UHN																			
LS part			GT diff. exh.				[3SS+200CW+8S]			1	1195	4,7	7,429			3			*28*
							[1SE]-barrier wall												
18	26	19	16	14	1		-17	-25	-47										
SL casing			GT diff. exh.				1 elbow			1	1195	4,5	4,571			3			*22*
							0,25 x ES + 3SST+150CW+6ST												
5	14	20	8	5	-7		-20	-34	-52										
outlet duct			GT diff. exh.				1 elbow			1	1195	4,4	8			3			*4*
							E silencer + 3SST+150CW+6ST												
-5	0	0	-17	-23	-41		-60	-75	-92										
stack outlet			GT diff. exh.				1 elbow			1	1195	4,3				0			*28*
							E silencer + SRD+SRO + Cor6									DI 5			
17	27	14	11	14	4		-17	-33	-54										
Exhaust Stack 13UHN																			
21	**30**	**23**	**17**	**17**	**6**		**-13**	**-24**	**-45**										***32***
Lube Oil Coolers 13URC (MBV-System)																			
FFC air int.			LOC air int.							3	1190	4,7				3			*15*
-22	-7	5	13	10	-1		-21	-35	-51										
FFC air outl.			LOC air outl.							3	1190	4,7				0			*14*
-23	-8	4	12	9	-2		-22	-36	-52										
Lube Oil Coolers 13URC (MBV-System)																			
-19	**-4**	**8**	**15**	**12**	**2**		**-18**	**-32**	**-48**										***18***
Forced Cooling Water Cooler 13URB (MPR-System)																			
FFC air int.			LOC air int.							8	1205	4,7				3			*19*
-18	-3	9	17	14	3		-17	-31	-48										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP1 @1100m north x=40m y=1194m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																		
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
FFC air outl.			LOC air outl.						8	1205	4,7				0			*18*
-19	-4	8	16	13	2	-18	-32	-48										
Forced Cooling Water Cooler 13URB (MPR-System)																		
-15	**0**	**12**	**19**	**16**	**6**	**-14**	**-28**	**-45**										***22***
Transformers 13BAT/BBT/BFT																		
13BAT TF UBF			GT gen. transf.						1	1119	4,7				9			*28*
-28	-5	19	24	24	13	-11	-26	-51										
13BBT TF UBE			UBE transf.						1	1128	4,7				6			*12*
-47	-20	5	10	1	-7	-31	-51	-76										
13BFT TFUBD			UBD transf.						2	1138	4,8				6			*8*
-48	-24	1	6	-4	-12	-36	-55	-81										
Transformers 13BAT/BBT/BFT																		
-28	**-5**	**19**	**25**	**24**	**13**	**-11**	**-26**	**-51**										***28***
Power Control Centers 13UBA01-02																		
13UBA, ACU			UBA, ACU						2	1147	4,7				6			*11*
-19	-7	2	8	7	-4	-26	-44	-65										
Power Control Centers 13UBA01-02																		
-19	**-7**	**2**	**8**	**7**	**-4**	**-26**	**-44**	**-65**										***11***
Unidentified Noise Sources Unit 13																		
UIF-NC			UIF-NC						1	1168	4,6				3			*34*
11	24	29	31	24	12	-12	-29	-48										
Unidentified Noise Sources Unit 13																		
11	**24**	**29**	**31**	**24**	**12**	**-12**	**-29**	**-48**										***34***
Control Room Building 00UCA/UBA (Clients Scope of Supply)																		
ACSCU 1			ACSCU			[SL 2/1/5]			2	1145	4,7				6			*10*
-19	-6	3	8	1	-16	-31	-39	-56										
ACSCU 2			ACSCU			[SL 2/1/5]			4	1145	4,7				6			*13*
-16	-3	7	11	4	-13	-28	-36	-53										
ACSCU 3			ACSCU			[SL 2/1/5]			2	1145	4,7				6			*10*
-19	-6	3	8	1	-16	-31	-39	-56										
RFG unit			HVAC RFU			[SL 2/1/5]			2	1145	4,8				6			*3*
-8	-10	-5	1	-5	-9	-18	-30	-50										
Control Room Building 00UCA/UBA (Clients Scope of Supply)																		
-7	**0**	**10**	**14**	**7**	**-6**	**-17**	**-29**	**-47**										***16***
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																		
fuel oil transfer pun			FOTF pump						1	1203	4,8	70,79			6			*20*
-32	-8	10	15	16	8	-13	-27	-52										
fuel oil forwarding p			FOFW pump						1	1203	4,8	70,79			6			*18*
-37	-6	12	13	14	7	-12	-25	-45										
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																		
-31	**-4**	**14**	**17**	**18**	**10**	**-10**	**-23**	**-44**										***22***
overall level																		
26	**36**	**36**	**38**	**34**	**22**	**1**	**-13**	**-24**										***42***

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Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP2 @1100m east x=1187m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																				
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
Gas Turbine Package 11UMB																				
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1192	4,7	252	-6		1			*15*
-1	10	11	11	1	-18	-40	-57	-79											
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1180	4,7	378	-6		6			*22*
6	17	18	17	8	-11	-33	-50	-71											
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1192	4,7	252	-6		6			*20*
4	15	16	16	6	-13	-35	-52	-74											
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1204	4,7	378	-6		-14			*2*
-14	-4	-3	-3	-12	-31	-53	-71	-92											
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1192	4,6	864	-6		0			*20*
4	14	15	15	6	-13	-35	-53	-74											
gate E			SPL ins. UMB			steel s. gate			1	1180	4,7	9	-6		6			*14*
-10	2	7	9	8	-1	-24	-45	-65											
gate W			SPL ins. UMB			steel s. gate			1	1204	4,7	9	-6		-14			*-7*
-30	-18	-13	-11	-12	-21	-45	-66	-87											
doors			SPL ins. UMB			steel s. gate			1	1192	4,7	8	-6		6			*13*
-11	2	7	9	7	-2	-25	-46	-66											
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1191	4,7	2,25	-6		6			*11*
-14	0	6	7	0	-18	-31	-43	-59											
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1180	4,7	6,25	-6		6			*20*
-5	9	16	16	9	-9	-22	-33	-49											
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1196	4,7	6,25	-6		3			*12*
-13	2	8	8	1	-17	-30	-41	-58											
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1181	4,8				6			*13*
-7	3	9	9	-3	-27	-41	-51	-66											
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1179	4,8				4			*14*
-6	4	10	10	-2	-25	-40	-50	-65											
Gas Turbine Package 11UMB																			
11	**21**	**23**	**23**	**16**	**3**	**-18**	**-31**	**-48**											***28***
Gas Turbine Filterhouse 11MBL																				
EB casing			GT compr. ait.			[S/120MW/S]			1	1187	4,6	3,16			3			*3*
-13	-5	-7	-8	0	-6	-17	-36	-54											
SL casing			GT compr. ait.			1 elbow			1	1187	4,6	1,803			3			*-9*
						0,25 x AIS + [S/120MW/S]													
-19	-12	-14	-21	-19	-26	-37	-54	-64											
FHA intakes			GT compr. ait.			1 elbow			1	1187	4,5				4			*17*
						2 x filter + AI silencer													
4	11	15	0	-14	-14	-32	-47	-33											
Gas Turbine Filterhouse 11MBL																			
4	**11**	**15**	**1**	**0**	**-6**	**-17**	**-36**	**-33**											***17***
Gas Turbine Diffuser Extension Duct 11MBR																			
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1187	4,7	10,67			6			*29*
						insertion loss value SBW													
-4	14	21	24	26	13	-5	-22	-42											
Gas Turbine Diffuser Extension Duct 11MBR																			
-4	**14**	**21**	**24**	**26**	**13**	**-5**	**-22**	**-42**											***29***
Exhaust Stack 11UHN																			
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1187	4,7	7,429			6			*31*
						[1SE]-barrier wall													
21	29	22	19	17	4	-13	-21	-44											
SL casing			GT diff. exh.			1 elbow			1	1187	4,5	4,571			3			*22*
						0,25 x ES + 3SST+150CW+6ST													
5	14	20	8	5	-7	-20	-34	-52											

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP2 @1100m east x=1187m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																		
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
outlet duct			GT diff. exh.			1 elbow			1	1188	4,4	8			3			*4*
						E silencer + 3SST+150CW+6ST												
-5	0	0	-17	-22	-41	-59	-74	-92										
stack outlet			GT diff. exh.			1 elbow			1	1188	4,3				0			*28*
						E silencer + SRD+SRO + Cor6									DI 5			
17	27	14	11	15	4	-17	-33	-54										
Exhaust Stack 11UHN																		
23	**31**	**25**	**20**	**19**	**7**	**-11**	**-21**	**-43**										***33***
Lube Oil Coolers 11URC (MBV-System)																		
FFC air int.			LOC air int.						3	1202	4,7				3			*15*
-22	-7	5	12	10	-1	-21	-35	-52										
FFC air outl.			LOC air outl.						3	1202	4,7				0			*14*
-23	-8	4	11	9	-2	-22	-36	-53										
Lube Oil Coolers 11URC (MBV-System)																		
-19	**-4**	**7**	**15**	**12**	**1**	**-18**	**-33**	**-49**										***17***
Forced Cooling Water Cooler 11URB (MPR-System)																		
FFC air int.			LOC air int.						8	1203	4,7				6			*22*
-15	0	12	20	17	6	-14	-28	-44										
FFC air outl.			LOC air outl.						8	1203	4,7				3			*21*
-16	-1	11	19	16	5	-15	-29	-45										
Forced Cooling Water Cooler 11URB (MPR-System)																		
-12	**3**	**15**	**22**	**19**	**9**	**-11**	**-25**	**-42**										***25***
Transformers 11BAT/BBT/BFT																		
11BAT TF UBF			GT gen. transf.						1	1200	4,7				9			*27*
-29	-6	18	24	23	11	-14	-30	-55										
11BBT TF UBE			UBE transf.						1	1200	4,7				6			*11*
-48	-21	4	10	0	-9	-34	-54	-80										
11BFT TFUBD			UBD transf.						2	1197	4,8				6			*7*
-49	-25	0	6	-4	-13	-38	-58	-84										
Transformers 11BAT/BBT/BFT																		
-29	**-6**	**18**	**24**	**23**	**11**	**-14**	**-30**	**-55**										***27***
Power Control Centers 11UBA01-02																		
11UBA, ACU			UBA, ACU						2	1198	4,7				1			*6*
-24	-12	-3	2	1	-10	-33	-51	-73										
Power Control Centers 11UBA01-02																		
-24	**-12**	**-3**	**2**	**1**	**-10**	**-33**	**-51**	**-73**										***6***
Unidentified Noise Sources Unit 11																		
UIF-NC			UIF-NC						1	1192	4,6				3			*34*
11	24	28	30	24	11	-13	-30	-50										
Unidentified Noise Sources Unit 11																		
11	**24**	**28**	**30**	**24**	**11**	**-13**	**-30**	**-50**										***34***
Gas Turbine Package 12UMB																		
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1152	4,7	252	-6		1			*16*
0	10	11	11	2	-17	-38	-55	-76										
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1140	4,7	378	-6		6			*23*
7	17	18	18	9	-10	-31	-48	-69										
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1152	4,7	252	-6		6			*21*
5	15	16	16	7	-12	-33	-50	-71										
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1164	4,7	378	-6		-14			*2*
-14	-3	-2	-2	-11	-30	-52	-69	-90										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP2 @1100m east x=1187m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1152	4,6	864	-6		0			*20*
4	14	15	15	6	-12	-34	-51	-72										
gate E			SPL ins. UMB			steel s. gate			1	1140	4,7	9	-6		6			*14*
-10	3	8	10	9	0	-22	-43	-63										
gate W			SPL ins. UMB			steel s. gate			1	1164	4,7	9	-6		-14			*-6*
-30	-18	-12	-11	-12	-20	-43	-64	-84										
doors			SPL ins. UMB			steel s. gate			1	1152	4,7	8	-6		6			*13*
-10	2	7	9	8	-1	-23	-44	-64										
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1151	4,7	2,25	-6		6			*11*
-14	0	7	7	0	-17	-30	-41	-57										
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1140	4,7	6,25	-6		6			*20*
-5	10	16	17	10	-8	-20	-31	-47										
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1156	4,7	6,25	-6		3			*12*
-12	2	8	9	2	-16	-29	-40	-56										
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1141	4,8				6			*13*
-6	4	10	9	-3	-26	-40	-49	-64										
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1139	4,8				4			*14*
-5	5	11	10	-2	-25	-39	-48	-63										
Gas Turbine Package 12UMB																		
11	**21**	**24**	**24**	**17**	**4**	**-16**	**-30**	**-46**										***28***
Gas Turbine Filterhouse 12MBL																		
EB casing			GT compr. ait.			[S/120MW/S]			1	1147	4,6	3,16			3			*3*
-13	-5	-6	-8	1	-6	-16	-34	-52										
SL casing			GT compr. ait.			1 elbow			1	1147	4,6	1,803			3			*-8*
						0,25 x AIS + [S/120MW/S]												
-19	-12	-14	-21	-18	-25	-35	-52	-61										
FHA intakes			GT compr. ait.			1 elbow			1	1147	4,5				4			*17*
						2 x filter + AI silencer												
4	11	15	0	-13	-14	-31	-45	-31										
Gas Turbine Filterhouse 12MBL																		
4	**12**	**15**	**1**	**1**	**-5**	**-16**	**-34**	**-31**										***17***
Gas Turbine Diffuser Extension Duct 12MBR																		
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1147	4,7	10,67			6			*29*
						insertion loss value SBW												
-4	14	21	24	26	13	-4	-20	-40										
Gas Turbine Diffuser Extension Duct 12MBR																		
-4	**14**	**21**	**24**	**26**	**13**	**-4**	**-20**	**-40**										***29***
Exhaust Stack 12UHN																		
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1147	4,6	7,429			6			*31*
						[1SE]-barrier wall												
21	29	22	19	17	5	-12	-20	-41										
SL casing			GT diff. exh.			1 elbow			1	1147	4,5	4,571			3			*22*
						0,25 x ES + 3SST+150CW+6ST												
5	15	21	9	6	-6	-18	-32	-50										
outlet duct			GT diff. exh.			1 elbow			1	1148	4,4	8			3			*4*
						E silencer + 3SST+150CW+6ST												
-5	1	1	-16	-22	-40	-58	-72	-89										
stack outlet			GT diff. exh.			1 elbow			1	1148	4,3				0			*29*
						E silencer + SRD+SRO + Cor6									DI 5			
17	28	15	12	15	5	-15	-31	-51										
Exhaust Stack 12UHN																		
23	**32**	**25**	**20**	**19**	**8**	**-10**	**-19**	**-40**										***33***

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP2 @1100m east x=1187m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
Lube Oil Coolers 12URC (MBV-System)																		
FFC air int.			LOC air int.						3	1162	4,7				3			*15*
-22	-7	5	13	10	0	-20	-33	-49										
FFC air outl.			LOC air outl.						3	1162	4,7				0			*14*
-23	-8	4	12	9	-1	-21	-34	-50										
Lube Oil Coolers 12URC (MBV-System)																		
-19	**-4**	**8**	**15**	**13**	**2**	**-17**	**-31**	**-47**										***18***
Forced Cooling Water Cooler 12URB (MPR-System)																		
FFC air int.			LOC air int.						8	1163	4,7				6			*22*
-14	1	12	20	17	7	-12	-26	-42										
FFC air outl.			LOC air outl.						8	1163	4,7				3			*22*
-15	0	11	19	16	6	-13	-27	-43										
Forced Cooling Water Cooler 12URB (MPR-System)																		
-12	**3**	**15**	**23**	**20**	**9**	**-10**	**-24**	**-40**										***25***
Transformers 12BAT/BBT/BFT																		
12BAT TF UBF			GT gen. transf.						1	1160	4,7				9			*27*
-28	-5	18	24	23	12	-12	-28	-53										
12BBT TF UBE			UBE transf.						1	1160	4,7				6			*11*
-47	-20	4	10	0	-8	-32	-52	-78										
12BFT TFUBD			UBD transf.						2	1157	4,8				6			*8*
-48	-24	0	6	-4	-12	-36	-56	-82										
Transformers 12BAT/BBT/BFT																		
-28	**-5**	**19**	**24**	**23**	**12**	**-12**	**-28**	**-53**										***28***
Power Control Centers 12UBA01-02																		
12UBA, ACU			UBA, ACU						2	1158	4,7				1			*6*
-24	-12	-3	3	2	-10	-32	-49	-70										
Power Control Centers 12UBA01-02																		
-24	**-12**	**-3**	**3**	**2**	**-10**	**-32**	**-49**	**-70**										***6***
Unidentified Noise Sources Unit 12																		
UIF-NC			UIF-NC						1	1152	4,6				3			*34*
11	24	29	31	25	12	-11	-29	-47										
Unidentified Noise Sources Unit 12																		
11	**24**	**29**	**31**	**25**	**12**	**-11**	**-29**	**-47**										***34***
Gas Turbine Package 13UMB																		
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1112	4,7	252	-6		1			*16*
0	10	11	11	2	-16	-37	-54	-74										
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1100	4,7	378	-6		6			*23*
7	17	18	18	9	-9	-30	-46	-67										
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1112	4,7	252	-6		6			*21*
5	15	16	16	7	-11	-32	-49	-69										
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1124	4,7	378	-6		-14			*3*
-13	-3	-2	-2	-11	-29	-51	-67	-88										
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1112	4,6	864	-6		0			*21*
4	15	16	16	7	-12	-33	-49	-70										
gate E			SPL ins. UMB			steel s. gate			1	1100	4,7	9	-6		6			*14*
-9	3	8	10	9	1	-21	-41	-61										
gate W			SPL ins. UMB			steel s. gate			1	1124	4,7	9	-6		-14			*-6*
-30	-17	-12	-10	-11	-20	-42	-63	-82										
doors			SPL ins. UMB			steel s. gate			1	1112	4,7	8	-6		6			*14*
-10	2	7	9	8	0	-22	-43	-62										
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1111	4,7	2,25	-6		6			*11*
-14	1	7	8	1	-16	-28	-39	-54										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP2 @1100m east x=1187m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1100	4,7	6,25	-6		6			*21*
-4	10	16	17	10	-7	-19	-29	-45										
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1116	4,7	6,25	-6		3			*13*
-12	2	8	9	2	-15	-27	-38	-53										
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1101	4,8				6			*13*
-6	4	10	10	-2	-25	-38	-47	-62										
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1099	4,8				4			*14*
-5	5	11	11	-1	-24	-37	-46	-61										
Gas Turbine Package 13UMB																		
11	**22**	**24**	**24**	**17**	**4**	**-15**	**-28**	**-43**										***29***
Gas Turbine Filterhouse 13MBL																		
EB casing			GT compr. ait.			[S/120MW/S]			1	1107	4,6	3,16			3			*4*
-13	-5	-6	-7	1	-5	-14	-32	-50										
SL casing			GT compr. ait.			1 elbow			1	1107	4,6	1,803			3			*-8*
						0,25 x AIS + [S/120MW/S]												
-19	-11	-14	-21	-18	-24	-34	-50	-59										
FHA intakes			GT compr. ait.			1 elbow			1	1107	4,5				4			*17*
						2 x filter + AI silencer												
4	12	15	1	-13	-13	-29	-43	-28										
Gas Turbine Filterhouse 13MBL																		
4	**12**	**15**	**1**	**1**	**-4**	**-14**	**-32**	**-28**										***17***
Gas Turbine Diffuser Extension Duct 13MBR																		
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1107	4,7	10,67			6			*30*
						insertion loss value SBW												
-4	15	22	25	27	14	-2	-18	-38										
Gas Turbine Diffuser Extension Duct 13MBR																		
-4	**15**	**22**	**25**	**27**	**14**	**-2**	**-18**	**-38**										***30***
Exhaust Stack 13UHN																		
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1107	4,6	7,429			6			*32*
						[1SE]-barrier wall												
22	30	23	19	18	6	-11	-18	-39										
SL casing			GT diff. exh.			1 elbow			1	1108	4,5	4,571			3			*22*
						0,25 x ES + 3SST+150CW+6ST												
6	15	21	9	6	-6	-17	-30	-47										
outlet duct			GT diff. exh.			1 elbow			1	1108	4,4	8			3			*5*
						E silencer + 3SST+150CW+6ST												
-5	1	1	-16	-21	-39	-57	-71	-87										
stack outlet			GT diff. exh.			1 elbow			1	1108	4,3				0			*29*
						E silencer + SRD+SRO + Cor6									DI 5			
18	28	15	12	15	6	-14	-29	-49										
Exhaust Stack 13UHN																		
23	**32**	**25**	**20**	**20**	**9**	**-8**	**-17**	**-38**										***34***
Lube Oil Coolers 13URC (MBV-System)																		
FFC air int.			LOC air int.						3	1122	4,7				3			*16*
-21	-6	6	13	10	0	-18	-32	-47										
FFC air outl.			LOC air outl.						3	1122	4,7				0			*15*
-22	-7	5	12	9	-1	-19	-32	-48										
Lube Oil Coolers 13URC (MBV-System)																		
-19	**-4**	**8**	**16**	**13**	**3**	**-16**	**-29**	**-45**										***18***
Forced Cooling Water Cooler 13URB (MPR-System)																		
FFC air int.			LOC air int.						8	1123	4,7				6			*23*
-14	1	13	20	18	8	-11	-24	-40										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP2 @1100m east x=1187m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																		
Noise source			Spectrum			Trans./Insert.loss				Number	Dist [m]	A_{gr} [dB]	Surface [m²]	diff [dB]	C_{met} [dB]	Dc[dB] o.RW	Time [dB]	ΔL [dB]	L_s dB(A)
32	63	125	250	500	1k	2k	4k	8kHz											
FFC air outl.			LOC air outl.							8	1123	4,7				3			*22*
-15	0	12	19	17	7	-12	-25	-41											
Forced Cooling Water Cooler 13URB (MPR-System)																			
-12	**3**	**15**	**23**	**20**	**10**	**-8**	**-22**	**-37**											***25***
Transformers 13BAT/BBT/BFT																			
13BAT TF UBF			GT gen. transf.							1	1120	4,7				9			*28*
-28	-5	19	24	24	13	-11	-26	-51											
13BBT TF UBE			UBE transf.							1	1120	4,7				6			*12*
-47	-20	5	10	1	-7	-31	-50	-76											
13BFT TFUBD			UBD transf.							2	1117	4,8				6			*8*
-48	-24	1	6	-3	-11	-35	-54	-80											
Transformers 13BAT/BBT/BFT																			
-28	**-5**	**19**	**25**	**24**	**13**	**-11**	**-26**	**-51**											***28***
Power Control Centers 13UBA01-02																			
13UBA, ACU			UBA, ACU							2	1118	4,7				1			*6*
-24	-12	-3	3	2	-9	-30	-48	-68											
Power Control Centers 13UBA01-02																			
-24	**-12**	**-3**	**3**	**2**	**-9**	**-30**	**-48**	**-68**											***6***
Unidentified Noise Sources Unit 13																			
UIF-NC			UIF-NC							1	1112	4,6				3			*34*
11	24	29	31	25	13	-10	-27	-45											
Unidentified Noise Sources Unit 13																			
11	**24**	**29**	**31**	**25**	**13**	**-10**	**-27**	**-45**											***34***
Control Room Building 00UCA/UBA (Clients Scope of Supply)																			
ACSCU 1			ACSCU			[SL 2/1/5]				2	1222	4,7				6			*9*
-19	-7	3	7	0	-17	-33	-43	-61											
ACSCU 2			ACSCU			[SL 2/1/5]				4	1222	4,7				6			*12*
-16	-4	6	10	3	-14	-30	-40	-58											
ACSCU 3			ACSCU			[SL 2/1/5]				2	1222	4,7				6			*9*
-19	-7	3	7	0	-17	-33	-43	-61											
RFG unit			HVAC RFU			[SL 2/1/5]				2	1222	4,8				6			*3*
-8	-11	-6	0	-6	-10	-21	-34	-54											
Control Room Building 00UCA/UBA (Clients Scope of Supply)																			
-7	**-1**	**9**	**13**	**7**	**-8**	**-20**	**-32**	**-51**											***15***
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																			
fuel oil transfer pun			FOTF pump							1	1327	4,8	70,79			6			*18*
-33	-9	9	14	15	5	-18	-33	-59											
fuel oil forwarding p			FOFW pump							1	1327	4,8	70,79			6			*17*
-38	-7	11	12	13	4	-17	-31	-52											
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																			
-32	**-5**	**13**	**16**	**17**	**8**	**-14**	**-29**	**-51**											***21***
overall level																			
28	**38**	**37**	**38**	**36**	**24**	**4**	**-10**	**-24**											***43***

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Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP3 @1100m south x=40m y=-1120m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
Gas Turbine Package 11UMB																			
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1172	4,7	252	-6		-14			*1*
-15	-5	-4	-4	-13	-32	-54	-71	-92											
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1153	4,7	378	-6		6			*23*
6	17	18	18	9	-10	-32	-49	-70											
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1136	4,7	252	-6		6			*21*
5	15	16	16	7	-11	-33	-50	-70											
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1154	4,7	378	-6		1			*18*
1	12	13	13	4	-15	-37	-54	-75											
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1154	4,6	864	-6		0			*20*
4	14	15	15	6	-12	-34	-51	-72											
gate E			SPL ins. UMB			steel s. gate			1	1153	4,7	9	-6		6			*14*
-10	3	8	9	8	0	-23	-44	-64											
gate W			SPL ins. UMB			steel s. gate			1	1152	4,7	9	-6		1			*9*
-15	-2	3	4	3	-5	-28	-49	-69											
doors			SPL ins. UMB			steel s. gate			1	1154	4,7	8	-6		6			*13*
-10	2	7	9	8	-1	-23	-44	-64											
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1172	4,7	2,25	-6		-14			*-9*
-34	-20	-14	-13	-20	-38	-51	-62	-78											
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1153	4,7	6,25	-6		6			*20*
-5	10	16	17	10	-8	-21	-32	-48											
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1136	4,7	6,25	-6		6			*15*
-9	5	11	12	5	-13	-25	-36	-51											
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1176	4,8				5			*12*
-8	2	8	8	-4	-27	-42	-52	-67											
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1131	4,8				6			*16*
-3	7	13	12	1	-23	-36	-46	-60											
Gas Turbine Package 11UMB																			
11	**22**	**24**	**24**	**17**	**4**	**-16**	**-30**	**-46**											***29***
Gas Turbine Filterhouse 11MBL																			
EB casing			GT compr. ait.			[S/120MW/S]			1	1147	4,6	3,16			3			*3*
-13	-5	-6	-8	1	-6	-16	-34	-52											
SL casing			GT compr. ait.			1 elbow			1	1149	4,6	1,803			3			*-8*
						0,25 x AIS + [S/120MW/S]													
-19	-12	-14	-21	-18	-25	-35	-52	-61											
FHA intakes			GT compr. ait.			1 elbow			1	1157	4,5				2			*15*
						2 x filter + AI silencer													
2	9	13	-2	-15	-16	-33	-48	-33											
Gas Turbine Filterhouse 11MBL																			
2	**10**	**13**	**-1**	**1**	**-5**	**-16**	**-34**	**-33**											***15***
Gas Turbine Diffuser Extension Duct 11MBR																			
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1131	4,7	10,67			6			*30*
						insertion loss value SBW													
-4	15	21	25	26	14	-3	-19	-39											
Gas Turbine Diffuser Extension Duct 11MBR																			
-4	**15**	**21**	**25**	**26**	**14**	**-3**	**-19**	**-39**											***30***
Exhaust Stack 11UHN																			
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1121	4,6	7,429			6			*31*
						[1SE]-barrier wall													
22	30	23	19	17	6	-11	-18	-40											
SL casing			GT diff. exh.			1 elbow			1	1121	4,5	4,571			3			*22*
						0,25 x ES + 3SST+150CW+6ST													
5	15	21	9	6	-6	-17	-31	-48											

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP3 @1100m south x=40m y=-1120m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																		
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
outlet duct			GT diff. exh.			1 elbow			1	1121	4,4	8			3			*5*
						E silencer + 3SST+150CW+6ST												
-5	1	1	-16	-22	-39	-57	-71	-88										
stack outlet			GT diff. exh.			1 elbow			1	1121	4,3				0			*29*
						E silencer + SRD+SRO + Cor6									DI 5			
17	28	15	12	15	5	-14	-30	-50										
Exhaust Stack 11UHN																		
23	**32**	**25**	**20**	**20**	**9**	**-9**	**-18**	**-39**										***34***
Lube Oil Coolers 11URC (MBV-System)																		
FFC air int.			LOC air int.						3	1125	4,7				6			*19*
-18	-3	8	16	13	3	-15	-29	-44										
FFC air outl.			LOC air outl.						3	1125	4,7				3			*18*
-19	-4	8	15	12	2	-16	-30	-45										
Lube Oil Coolers 11URC (MBV-System)																		
-16	**-1**	**11**	**19**	**16**	**6**	**-13**	**-26**	**-42**										***21***
Forced Cooling Water Cooler 11URB (MPR-System)																		
FFC air int.			LOC air int.						8	1110	4,7				6			*23*
-14	1	13	21	18	8	-11	-24	-39										
FFC air outl.			LOC air outl.						8	1110	4,7				3			*22*
-15	0	12	20	17	7	-11	-25	-40										
Forced Cooling Water Cooler 11URB (MPR-System)																		
-11	**4**	**15**	**23**	**20**	**11**	**-8**	**-21**	**-37**										***26***
Transformers 11BAT/BBT/BFT																		
11BAT TF UBF			GT gen. transf.						1	1196	4,7				4			*22*
-34	-11	13	19	18	6	-19	-35	-60										
11BBT TF UBE			UBE transf.						1	1187	4,7				6			*11*
-48	-21	4	10	0	-9	-33	-53	-80										
11BFT TFUBD			UBD transf.						2	1177	4,8				3			*4*
-52	-28	-3	3	-7	-15	-40	-60	-86										
Transformers 11BAT/BBT/BFT																		
-33	**-10**	**14**	**19**	**18**	**6**	**-18**	**-35**	**-60**										***22***
Power Control Centers 11UBA01-02																		
11UBA, ACU			UBA, ACU						2	1168	4,7				3			*8*
-22	-10	-1	4	4	-8	-30	-48	-69										
Power Control Centers 11UBA01-02																		
-22	**-10**	**-1**	**4**	**4**	**-8**	**-30**	**-48**	**-69**										***8***
Unidentified Noise Sources Unit 11																		
UIF-NC			UIF-NC						1	1148	4,6				3			*34*
11	24	29	31	25	12	-11	-28	-47										
Unidentified Noise Sources Unit 11																		
11	**24**	**29**	**31**	**25**	**12**	**-11**	**-28**	**-47**										***34***
Gas Turbine Package 12UMB																		
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1171	4,7	252	-6		-14			*1*
-15	-5	-4	-4	-13	-32	-54	-71	-92										
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1153	4,7	378	-6		6			*23*
6	17	18	18	9	-10	-32	-49	-70										
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1135	4,7	252	-6		6			*21*
5	15	16	16	7	-11	-33	-50	-70										
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1153	4,7	378	-6		1			*18*
1	12	13	13	4	-15	-37	-54	-75										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP3 @1100m south x=40m y=-1120m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																				
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1153	4,6	864	-6		0			*20*
4	14	15	15	6	-12	-34	-51	-72										
gate E			SPL ins. UMB			steel s. gate			1	1153	4,7	9	-6		6			*14*
-10	3	8	9	8	0	-23	-44	-64										
gate W			SPL ins. UMB			steel s. gate			1	1151	4,7	9	-6		1			*9*
-15	-2	3	4	3	-5	-28	-49	-69										
doors			SPL ins. UMB			steel s. gate			1	1153	4,7	8	-6		6			*13*
-10	2	7	9	8	-1	-23	-44	-64										
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1171	4,7	2,25	-6		-14			*-9*
-34	-20	-14	-13	-20	-38	-51	-62	-78										
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1153	4,7	6,25	-6		6			*20*
-5	10	16	17	10	-8	-21	-32	-48										
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1135	4,7	6,25	-6		6			*15*
-9	5	11	12	5	-13	-25	-36	-51										
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1176	4,8				5			*12*
-8	2	8	8	-4	-27	-42	-52	-67										
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1131	4,8				6			*16*
-3	7	13	12	1	-23	-36	-46	-60										
Gas Turbine Package 12UMB																		
11	**22**	**24**	**24**	**17**	**4**	**-16**	**-30**	**-46**										***29***
Gas Turbine Filterhouse 12MBL																		
EB casing			GT compr. ait.			[S/120MW/S]			1	1146	4,6	3,16			3			*3*
-13	-5	-6	-8	1	-6	-16	-34	-52										
SL casing			GT compr. ait.			1 elbow			1	1148	4,6	1,803			3			*-8*
						0,25 x AIS + [S/120MW/S]												
-19	-12	-14	-21	-18	-25	-35	-52	-61										
FHA intakes			GT compr. ait.			1 elbow			1	1156	4,5				2			*15*
						2 x filter + AI silencer												
2	9	13	-2	-15	-16	-33	-48	-33										
Gas Turbine Filterhouse 12MBL																		
2	**10**	**13**	**-1**	**1**	**-5**	**-16**	**-34**	**-33**										***15***
Gas Turbine Diffuser Extension Duct 12MBR																		
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1130	4,7	10,67			6			*30*
						insertion loss value SBW												
-4	15	21	25	26	14	-3	-19	-39										
Gas Turbine Diffuser Extension Duct 12MBR																		
-4	**15**	**21**	**25**	**26**	**14**	**-3**	**-19**	**-39**										***30***
Exhaust Stack 12UHN																		
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1120	4,6	7,429			6			*31*
						[1SE]-barrier wall												
22	30	23	19	17	6	-11	-18	-40										
SL casing			GT diff. exh.			1 elbow			1	1120	4,5	4,571			3			*22*
						0,25 x ES + 3SST+150CW+6ST												
5	15	21	9	6	-6	-17	-31	-48										
outlet duct			GT diff. exh.			1 elbow			1	1120	4,4	8			3			*5*
						E silencer + 3SST+150CW+6ST												
-5	1	1	-16	-22	-39	-57	-71	-88										
stack outlet			GT diff. exh.			1 elbow			1	1120	4,3				0			*29*
						E silencer + SRD+SRO + Cor6									DI 5			
17	28	15	12	15	5	-14	-30	-50										
Exhaust Stack 12UHN																		
23	**32**	**25**	**20**	**20**	**9**	**-9**	**-18**	**-39**										***34***

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP3 @1100m south x=40m y=-1120m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
Lube Oil Coolers 12URC (MBV-System)																		
FFC air int.			LOC air int.						3	1124	4,7				6			*19*
-18	-3	8	16	13	3	-15	-29	-44										
FFC air outl.			LOC air outl.						3	1124	4,7				3			*18*
-19	-4	8	15	12	2	-16	-30	-45										
Lube Oil Coolers 12URC (MBV-System)																		
-16	**-1**	**11**	**19**	**16**	**6**	**-13**	**-26**	**-42**										***21***
Forced Cooling Water Cooler 12URB (MPR-System)																		
FFC air int.			LOC air int.						8	1109	4,7				6			*23*
-14	1	13	21	18	8	-10	-24	-39										
FFC air outl.			LOC air outl.						8	1109	4,7				3			*22*
-15	0	12	20	17	7	-11	-25	-40										
Forced Cooling Water Cooler 12URB (MPR-System)																		
-11	**4**	**15**	**23**	**20**	**11**	**-8**	**-21**	**-37**										***26***
Transformers 12BAT/BBT/BFT																		
12BAT TF UBF			GT gen. transf.						1	1195	4,7				4			*22*
-34	-11	13	19	18	6	-19	-35	-60										
12BBT TF UBE			UBE transf.						1	1186	4,7				6			*11*
-48	-21	4	10	0	-9	-33	-53	-79										
12BFT TFUBD			UBD transf.						2	1176	4,8				3			*4*
-52	-28	-3	3	-7	-15	-40	-60	-86										
Transformers 12BAT/BBT/BFT																		
-33	**-10**	**14**	**19**	**18**	**6**	**-18**	**-35**	**-60**										***22***
Power Control Centers 12UBA01-02																		
12UBA, ACU			UBA, ACU						2	1167	4,7				3			*8*
-22	-10	-1	4	4	-8	-30	-48	-69										
Power Control Centers 12UBA01-02																		
-22	**-10**	**-1**	**4**	**4**	**-8**	**-30**	**-48**	**-69**										***8***
Unidentified Noise Sources Unit 12																		
UIF-NC			UIF-NC						1	1147	4,6				3			*34*
11	24	29	31	25	12	-11	-28	-47										
Unidentified Noise Sources Unit 12																		
11	**24**	**29**	**31**	**25**	**12**	**-11**	**-28**	**-47**										***34***
Gas Turbine Package 13UMB																		
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1172	4,7	252	-6		-14			*1*
-15	-5	-4	-4	-13	-32	-54	-71	-92										
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1154	4,7	378	-6		6			*23*
6	17	18	18	9	-10	-32	-49	-70										
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1136	4,7	252	-6		6			*21*
5	15	16	16	7	-11	-33	-50	-70										
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1153	4,7	378	-6		1			*18*
1	12	13	13	4	-15	-37	-54	-75										
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1154	4,6	864	-6		0			*20*
4	14	15	15	6	-12	-34	-51	-72										
gate E			SPL ins. UMB			steel s. gate			1	1154	4,7	9	-6		6			*14*
-10	3	8	9	8	0	-23	-44	-64										
gate W			SPL ins. UMB			steel s. gate			1	1151	4,7	9	-6		1			*9*
-15	-2	3	4	3	-5	-28	-49	-69										
doors			SPL ins. UMB			steel s. gate			1	1154	4,7	8	-6		6			*13*
-10	2	7	9	8	-1	-23	-44	-64										
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1172	4,7	2,25	-6		-14			*-9*
-34	-20	-14	-13	-20	-38	-51	-62	-78										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP3 @1100m south x=40m y=-1120m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1154	4,7	6,25	-6		6			*20*
-5	10	16	17	10	-8	-21	-32	-48										
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1135	4,7	6,25	-6		6			*15*
-9	5	11	12	5	-13	-25	-36	-51										
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1177	4,8				5			*12*
-8	2	8	8	-4	-27	-42	-52	-67										
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1132	4,8				6			*16*
-3	7	13	12	1	-23	-36	-46	-60										
Gas Turbine Package 13UMB																		
11	**22**	**24**	**24**	**17**	**4**	**-16**	**-30**	**-46**										***29***
Gas Turbine Filterhouse 13MBL																		
EB casing			GT compr. ait.			[S/120MW/S]			1	1147	4,6	3,16			3			*3*
-13	-5	-6	-8	1	-6	-16	-34	-52										
SL casing			GT compr. ait.			1 elbow			1	1149	4,6	1,803			3			*-8*
						0,25 x AIS + [S/120MW/S]												
-19	-12	-14	-21	-18	-25	-35	-52	-61										
FHA intakes			GT compr. ait.			1 elbow			1	1157	4,5				2			*15*
						2 x filter + AI silencer												
2	9	13	-2	-15	-16	-33	-48	-33										
Gas Turbine Filterhouse 13MBL																		
2	**10**	**13**	**-1**	**1**	**-5**	**-16**	**-34**	**-33**										***15***
Gas Turbine Diffuser Extension Duct 13MBR																		
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1131	4,7	10,67			6			*30*
						insertion loss value SBW												
-4	15	21	25	26	14	-3	-19	-39										
Gas Turbine Diffuser Extension Duct 13MBR																		
-4	**15**	**21**	**25**	**26**	**14**	**-3**	**-19**	**-39**										***30***
Exhaust Stack 13UHN																		
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1121	4,6	7,429			6			*31*
						[1SE]-barrier wall												
22	30	23	19	17	6	-11	-18	-40										
SL casing			GT diff. exh.			1 elbow			1	1121	4,5	4,571			3			*22*
						0,25 x ES + 3SST+150CW+6ST												
5	15	21	9	6	-6	-17	-31	-48										
outlet duct			GT diff. exh.			1 elbow			1	1121	4,4	8			3			*5*
						E silencer + 3SST+150CW+6ST												
-5	1	1	-16	-22	-39	-57	-71	-88										
stack outlet			GT diff. exh.			1 elbow			1	1121	4,3				0			*29*
						E silencer + SRD+SRO + Cor6									DI 5			
17	28	15	12	15	5	-14	-30	-50										
Exhaust Stack 13UHN																		
23	**32**	**25**	**20**	**20**	**9**	**-9**	**-18**	**-39**										***34***
Lube Oil Coolers 13URC (MBV-System)																		
FFC air int.			LOC air int.						3	1124	4,7				6			*19*
-18	-3	8	16	13	3	-15	-29	-44										
FFC air outl.			LOC air outl.						3	1124	4,7				3			*18*
-19	-4	8	15	12	2	-16	-30	-45										
Lube Oil Coolers 13URC (MBV-System)																		
-16	**-1**	**11**	**19**	**16**	**6**	**-13**	**-26**	**-42**										***21***
Forced Cooling Water Cooler 13URB (MPR-System)																		
FFC air int.			LOC air int.						8	1109	4,7				6			*23*
-14	1	13	21	18	8	-10	-24	-39										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP3 @1100m south x=40m y=-1120m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																		
Noise source			Spectrum			Trans./Insert.loss				Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz		ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
FFC air outl.			LOC air outl.							8	1109	4,7				3			*22*
-15	0	12	20	17	7	-11	-25	-40											
Forced Cooling Water Cooler 13URB (MPR-System)																			
-11	**4**	**15**	**23**	**20**	**11**	**-8**	**-21**	**-37**											***26***
Transformers 13BAT/BBT/BFT																			
13BAT TF UBF			GT gen. transf.							1	1195	4,7				4			*22*
-34	-11	13	19	18	6	-19	-35	-60											
13BBT TF UBE			UBE transf.							1	1186	4,7				6			*11*
-48	-21	4	10	0	-9	-33	-53	-79											
13BFT TFUBD			UBD transf.							2	1176	4,8				3			*4*
-52	-28	-3	3	-7	-15	-40	-60	-86											
Transformers 13BAT/BBT/BFT																			
-33	**-10**	**14**	**19**	**18**	**6**	**-18**	**-35**	**-60**											***22***
Power Control Centers 13UBA01-02																			
13UBA, ACU			UBA, ACU							2	1167	4,7				3			*8*
-22	-10	-1	4	4	-8	-30	-48	-69											
Power Control Centers 13UBA01-02																			
-22	**-10**	**-1**	**4**	**4**	**-8**	**-30**	**-48**	**-69**											***8***
Unidentified Noise Sources Unit 13																			
UIF-NC			UIF-NC							1	1148	4,6				3			*34*
11	24	29	31	25	12	-11	-28	-47											
Unidentified Noise Sources Unit 13																			
11	**24**	**29**	**31**	**25**	**12**	**-11**	**-28**	**-47**											***34***
Control Room Building 00UCA/UBA (Clients Scope of Supply)																			
ACSCU 1			ACSCU			[SL 2/1/5]				2	1173	4,7				6			*10*
-19	-7	3	7	1	-16	-32	-41	-58											
ACSCU 2			ACSCU			[SL 2/1/5]				4	1173	4,7				6			*13*
-16	-4	6	10	4	-13	-29	-38	-55											
ACSCU 3			ACSCU			[SL 2/1/5]				2	1173	4,7				6			*10*
-19	-7	3	7	1	-16	-32	-41	-58											
RFG unit			HVAC RFU			[SL 2/1/5]				2	1173	4,8				6			*3*
-8	-10	-6	1	-6	-9	-19	-32	-52											
Control Room Building 00UCA/UBA (Clients Scope of Supply)																			
-7	**0**	**9**	**14**	**7**	**-7**	**-18**	**-30**	**-49**											***16***
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																			
fuel oil transfer pun			FOTF pump							1	1139	4,8	70,79			6			*20*
-32	-8	10	16	17	9	-11	-25	-48											
fuel oil forwarding p			FOFW pump							1	1139	4,8	70,79			6			*19*
-37	-6	12	14	15	8	-10	-23	-41											
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																			
-31	**-4**	**14**	**18**	**19**	**11**	**-8**	**-20**	**-41**											***23***
overall level																			
28	**38**	**37**	**38**	**35**	**24**	**5**	**-9**	**-25**											***43***

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Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP4 @1100m west x=-1254m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																				
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
Gas Turbine Package 11UMB																				
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1249	4,7	252	-6		3			*17*
1	11	12	12	3	-17	-40	-58	-80											
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1261	4,7	378	-6		-14			*2*
-14	-4	-3	-3	-13	-32	-55	-74	-96											
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1249	4,7	252	-6		6			*20*
4	14	15	15	6	-14	-37	-55	-77											
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1237	4,7	378	-6		6			*22*
6	16	17	17	8	-12	-35	-52	-74											
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1249	4,6	864	-6		0			*19*
3	14	15	14	5	-14	-37	-55	-77											
gate E			SPL ins. UMB			steel s. gate			1	1261	4,7	9	-6		-14			*-7*
-31	-18	-13	-12	-13	-22	-47	-69	-90											
gate W			SPL ins. UMB			steel s. gate			1	1237	4,7	9	-6		6			*13*
-10	2	7	9	7	-2	-26	-48	-69											
doors			SPL ins. UMB			steel s. gate			1	1249	4,7	8	-6		6			*12*
-11	1	6	8	7	-3	-27	-49	-70											
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1250	4,8	2,25	-6		3			*7*
-18	-3	3	3	-4	-22	-36	-48	-65											
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1261	4,8	6,25	-6		-14			*-1*
-25	-11	-5	-4	-12	-30	-45	-57	-74											
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1245	4,8	6,25	-6		6			*15*
-10	4	10	11	4	-15	-29	-41	-58											
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1260	4,8				6			*12*
-7	3	9	8	-4	-28	-44	-55	-71											
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1262	4,8				5			*14*
-5	5	11	10	-2	-26	-42	-53	-69											
Gas Turbine Package 11UMB																				
10	**21**	**22**	**22**	**15**	**2**	**-21**	**-38**	**-56**												***27***
Gas Turbine Filterhouse 11MBL																				
EB casing			GT compr. ait.			[S/120MW/S]			1	1254	4,6	3,16			3			*2*
-14	-6	-7	-9	-1	-8	-19	-39	-58											
SL casing			GT compr. ait.			1 elbow			1	1254	4,6	1,803			3			*-9*
						0,25 x AIS + [S/120MW/S]													
-20	-13	-15	-22	-19	-27	-39	-57	-67											
FHA intakes			GT compr. ait.			1 elbow			1	1254	4,6				4			*16*
						2 x filter + AI silencer													
3	11	14	-1	-14	-16	-34	-50	-37											
Gas Turbine Filterhouse 11MBL																				
3	**11**	**14**	**0**	**0**	**-7**	**-19**	**-39**	**-37**												***16***
Gas Turbine Diffuser Extension Duct 11MBR																				
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1254	4,7	10,67			6			*28*
						insertion loss value SBW													
-5	14	21	24	25	11	-7	-25	-46											
Gas Turbine Diffuser Extension Duct 11MBR																				
-5	**14**	**21**	**24**	**25**	**11**	**-7**	**-25**	**-46**												***28***
Exhaust Stack 11UHN																				
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1254	4,7	7,429			6			*30*
						[1SE]-barrier wall													
21	29	22	18	16	3	-16	-24	-47											
SL casing			GT diff. exh.			1 elbow			1	1254	4,6	4,571			3			*21*
						0,25 x ES + 3SST+150CW+6ST													
4	14	20	8	5	-8	-22	-37	-56											

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP4 @1100m west x=-1254m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																		
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
outlet duct			GT diff. exh.			1 elbow			1	1255	4,4	8			3			*3*
						E silencer + 3SST+150CW+6ST												
-6	0	0	-17	-23	-42	-62	-77	-95										
stack outlet			GT diff. exh.			1 elbow			1	1255	4,4				0			*28*
						E silencer + SRD+SRO + Cor6									DI 5			
16	27	14	11	14	3	-19	-36	-57										
Exhaust Stack 11UHN																		
22	**31**	**24**	**19**	**18**	**6**	**-13**	**-24**	**-46**										***33***
Lube Oil Coolers 11URC (MBV-System)																		
FFC air int.			LOC air int.						3	1239	4,8				6			*18*
-19	-4	8	15	12	1	-19	-34	-51										
FFC air outl.			LOC air outl.						3	1239	4,7				3			*17*
-20	-5	7	14	11	0	-20	-35	-52										
Lube Oil Coolers 11URC (MBV-System)																		
-17	**-2**	**10**	**18**	**15**	**4**	**-17**	**-31**	**-48**										***20***
Forced Cooling Water Cooler 11URB (MPR-System)																		
FFC air int.			LOC air int.						8	1240	4,8				6			*22*
-15	0	12	19	16	5	-15	-30	-46										
FFC air outl.			LOC air outl.						8	1240	4,7				3			*21*
-16	-1	11	18	15	4	-16	-31	-47										
Forced Cooling Water Cooler 11URB (MPR-System)																		
-12	**3**	**14**	**22**	**19**	**8**	**-13**	**-27**	**-44**										***24***
Transformers 11BAT/BBT/BFT																		
11BAT TF UBF			GT gen. transf.						1	1243	4,7				9			*27*
-29	-6	18	23	22	10	-15	-32	-58										
11BBT TF UBE			UBE transf.						1	1243	4,8				6			*11*
-48	-21	4	9	-1	-10	-35	-56	-83										
11BFT TFUBD			UBD transf.						2	1244	4,8				6			*7*
-49	-25	0	5	-5	-14	-39	-60	-87										
Transformers 11BAT/BBT/BFT																		
-29	**-6**	**18**	**24**	**22**	**10**	**-15**	**-32**	**-58**										***27***
Power Control Centers 11UBA01-02																		
11UBA, ACU			UBA, ACU						2	1243	4,7				6			*10*
-20	-8	1	7	6	-6	-30	-48	-70										
Power Control Centers 11UBA01-02																		
-20	**-8**	**1**	**7**	**6**	**-6**	**-30**	**-48**	**-70**										***10***
Unidentified Noise Sources Unit 11																		
UIF-NC			UIF-NC						1	1249	4,6				3			*33*
10	23	28	30	24	10	-15	-33	-53										
Unidentified Noise Sources Unit 11																		
10	**23**	**28**	**30**	**24**	**10**	**-15**	**-33**	**-53**										***33***
Gas Turbine Package 12UMB																		
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1289	4,7	252	-6		3			*17*
1	11	12	12	2	-17	-41	-60	-82										
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1301	4,7	378	-6		-14			*1*
-15	-4	-3	-4	-13	-33	-57	-75	-98										
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1289	4,7	252	-6		6			*20*
4	14	15	15	5	-14	-38	-57	-79										
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1277	4,7	378	-6		6			*22*
6	16	17	17	7	-12	-36	-54	-77										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP4 @1100m west x=-1254m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k		2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
roof			SPL ins. UMB				0,6(S/MW/TS)			1	1289	4,6	864	-6		0			*19*
3	13	14	14	5	-15		-39	-57	-80										
gate E			SPL ins. UMB				steel s. gate			1	1301	4,7	9	-6		-14			*-8*
-31	-19	-14	-12	-13	-23		-48	-71	-92										
gate W			SPL ins. UMB				steel s. gate			1	1277	4,7	9	-6		6			*13*
-11	2	7	8	7	-3		-27	-49	-71										
doors			SPL ins. UMB				steel s. gate			1	1289	4,7	8	-6		6			*12*
-11	1	6	8	6	-3		-28	-51	-72										
air suppl. op. N			SPL ins. UMB				[SL 2/1/5]			1	1290	4,8	2,25	-6		3			*7*
-18	-4	2	3	-4	-23		-38	-50	-68										
air suppl. op. E			SPL ins. UMB				[SL 2/1/5]			3	1301	4,8	6,25	-6		-14			*-1*
-26	-11	-5	-5	-12	-31		-46	-58	-76										
air suppl. op. S			SPL ins. UMB				[SL 2/1/5]			1	1285	4,8	6,25	-6		6			*14*
-10	4	10	11	3	-15		-30	-42	-60										
air exh. Unit N			House, Fan				[SL 2/1/7,5]			1	1300	4,8				6			*12*
-7	3	8	8	-4	-29		-45	-56	-73										
air exh. Units S			House, Fan				[SL 2/1/7,5]			2	1302	4,8				5			*14*
-5	5	10	10	-2	-27		-43	-54	-71										
Gas Turbine Package 12UMB																			
10	**20**	**22**	**22**	**14**	**1**		**-23**	**-40**	**-58**										***27***
Gas Turbine Filterhouse 12MBL																			
EB casing			GT compr. ait.				[S/120MW/S]			1	1294	4,6	3,16			3			*2*
-14	-6	-7	-9	-1	-9		-21	-41	-60										
SL casing			GT compr. ait.				1 elbow			1	1294	4,6	1,803			3			*-10*
							0,25 x AIS + [S/120MW/S]												
-20	-13	-15	-22	-20	-28		-40	-59	-70										
FHA intakes			GT compr. ait.				1 elbow			1	1294	4,6				4			*16*
							2 x filter + AI silencer												
3	10	14	-1	-15	-16		-36	-52	-39										
Gas Turbine Filterhouse 12MBL																			
3	**10**	**14**	**0**	**-1**	**-8**		**-21**	**-40**	**-39**										***16***
Gas Turbine Diffuser Extension Duct 12MBR																			
diff. ext. duct			GT diff. exh.				3 ST/150/10 ST			1	1294	4,7	10,67			6			*28*
							insertion loss value SBW												
-5	13	20	23	25	11		-9	-27	-48										
Gas Turbine Diffuser Extension Duct 12MBR																			
-5	**13**	**20**	**23**	**25**	**11**		**-9**	**-27**	**-48**										***28***
Exhaust Stack 12UHN																			
LS part			GT diff. exh.				[3SS+200CW+8S]			1	1294	4,7	7,429			6			*30*
							[1SE]-barrier wall												
20	28	21	18	16	2		-17	-26	-50										
SL casing			GT diff. exh.				1 elbow			1	1294	4,6	4,571			3			*21*
							0,25 x ES + 3SST+150CW+6ST												
4	14	19	7	4	-9		-23	-39	-58										
outlet duct			GT diff. exh.				1 elbow			1	1295	4,4	8			3			*3*
							E silencer + 3SST+150CW+6ST												
-6	-1	0	-17	-24	-43		-63	-79	-98										
stack outlet			GT diff. exh.				1 elbow			1	1295	4,4				0			*27*
							E silencer + SRD+SRO + Cor6									DI 5			
16	27	13	10	13	2		-20	-37	-60										
Exhaust Stack 12UHN																			
22	**31**	**24**	**19**	**18**	**5**		**-15**	**-26**	**-49**										***32***

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP4 @1100m west x=-1254m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum			Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
Lube Oil Coolers 12URC (MBV-System)																		
FFC air int.			LOC air int.						3	1279	4,8				6			*17*
-20	-5	7	15	12	0	-21	-36	-53										
FFC air outl.			LOC air outl.						3	1279	4,7				3			*16*
-21	-6	6	14	11	-1	-22	-37	-54										
Lube Oil Coolers 12URC (MBV-System)																		
-17	**-2**	**10**	**17**	**14**	**3**	**-18**	**-33**	**-50**										***20***
Forced Cooling Water Cooler 12URB (MPR-System)																		
FFC air int.			LOC air int.						8	1280	4,8				6			*21*
-15	0	12	19	16	5	-16	-31	-49										
FFC air outl.			LOC air outl.						8	1280	4,7				3			*20*
-16	-1	11	18	15	4	-17	-32	-50										
Forced Cooling Water Cooler 12URB (MPR-System)																		
-13	**2**	**14**	**22**	**18**	**7**	**-14**	**-29**	**-46**										***24***
Transformers 12BAT/BBT/BFT																		
12BAT TF UBF			GT gen. transf.						1	1283	4,7				9			*26*
-29	-6	18	23	22	10	-17	-34	-60										
12BBT TF UBE			UBE transf.						1	1283	4,8				6			*10*
-48	-21	4	9	-1	-10	-37	-58	-85										
12BFT TFUBD			UBD transf.						2	1284	4,8				6			*6*
-49	-25	-1	5	-5	-14	-41	-62	-89										
Transformers 12BAT/BBT/BFT																		
-29	**-6**	**18**	**23**	**22**	**10**	**-17**	**-34**	**-60**										***26***
Power Control Centers 12UBA01-02																		
12UBA, ACU			UBA, ACU						2	1283	4,7				6			*10*
-20	-8	1	7	5	-7	-31	-50	-72										
Power Control Centers 12UBA01-02																		
-20	**-8**	**1**	**7**	**5**	**-7**	**-31**	**-50**	**-72**										***10***
Unidentified Noise Sources Unit 12																		
UIF-NC			UIF-NC						1	1289	4,6				3			*33*
10	23	28	30	23	10	-16	-35	-55										
Unidentified Noise Sources Unit 12																		
10	**23**	**28**	**30**	**23**	**10**	**-16**	**-35**	**-55**										***33***
Gas Turbine Package 13UMB																		
wall N			SPL ins. UMB			0,6(S/MW/TS)			1	1329	4,7	252	-6		3			*16*
0	11	12	11	2	-18	-43	-61	-84										
wall E			SPL ins. UMB			0,6(S/MW/TS)			1	1341	4,7	378	-6		-14			*1*
-15	-5	-4	-4	-13	-34	-58	-77	-100										
wall S			SPL ins. UMB			0,6(S/MW/TS)			1	1329	4,7	252	-6		6			*19*
3	14	15	14	5	-15	-40	-58	-81										
wall W			SPL ins. UMB			0,6(S/MW/TS)			1	1317	4,7	378	-6		6			*21*
5	16	17	16	7	-13	-37	-56	-79										
roof			SPL ins. UMB			0,6(S/MW/TS)			1	1329	4,6	864	-6		0			*19*
3	13	14	14	4	-16	-40	-59	-82										
gate E			SPL ins. UMB			steel s. gate			1	1341	4,7	9	-6		-14			*-8*
-31	-19	-14	-12	-14	-24	-49	-72	-94										
gate W			SPL ins. UMB			steel s. gate			1	1317	4,7	9	-6		6			*12*
-11	1	6	8	7	-3	-29	-51	-73										
doors			SPL ins. UMB			steel s. gate			1	1329	4,7	8	-6		6			*12*
-12	1	6	7	6	-4	-30	-52	-74										
air suppl. op. N			SPL ins. UMB			[SL 2/1/5]			1	1330	4,8	2,25	-6		3			*6*
-18	-4	2	3	-5	-24	-39	-52	-70										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP4 @1100m west x=-1254m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																			
Noise source			Spectrum				Trans./Insert.loss			Num-	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz	ber	[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
air suppl. op. E			SPL ins. UMB			[SL 2/1/5]			3	1341	4,8	6,25	-6		-14			*-1*
-26	-12	-6	-5	-13	-32	-47	-60	-78										
air suppl. op. S			SPL ins. UMB			[SL 2/1/5]			1	1325	4,8	6,25	-6		6			*14*
-11	4	10	10	3	-16	-32	-44	-62										
air exh. Unit N			House, Fan			[SL 2/1/7,5]			1	1340	4,8				6			*12*
-8	2	8	8	-5	-30	-47	-58	-75										
air exh. Units S			House, Fan			[SL 2/1/7,5]			2	1342	4,8				5			*14*
-6	4	10	10	-3	-28	-45	-56	-73										
Gas Turbine Package 13UMB																		
10	**20**	**22**	**22**	**14**	**0**	**-24**	**-42**	**-60**										***26***
Gas Turbine Filterhouse 13MBL																		
EB casing			GT compr. ait.			[S/120MW/S]			1	1334	4,6	3,16			3			*1*
-15	-7	-8	-9	-2	-9	-22	-43	-63										
SL casing			GT compr. ait.			1 elbow			1	1334	4,6	1,803			3			*-10*
						0,25 x AIS + [S/120MW/S]												
-20	-13	-15	-23	-20	-29	-42	-61	-72										
FHA intakes			GT compr. ait.			1 elbow			1	1334	4,6				4			*16*
						2 x filter + AI silencer												
3	10	14	-1	-15	-17	-37	-54	-41										
Gas Turbine Filterhouse 13MBL																		
3	**10**	**14**	**-1**	**-1**	**-9**	**-22**	**-42**	**-41**										***16***
Gas Turbine Diffuser Extension Duct 13MBR																		
diff. ext. duct			GT diff. exh.			3 ST/150/10 ST			1	1334	4,7	10,67			6			*28*
						insertion loss value SBW												
-5	13	20	23	24	10	-10	-29	-50										
Gas Turbine Diffuser Extension Duct 13MBR																		
-5	**13**	**20**	**23**	**24**	**10**	**-10**	**-29**	**-50**										***28***
Exhaust Stack 13UHN																		
LS part			GT diff. exh.			[3SS+200CW+8S]			1	1334	4,7	7,429			6			*30*
						[1SE]-barrier wall												
20	28	21	17	15	1	-19	-28	-52										
SL casing			GT diff. exh.			1 elbow			1	1334	4,6	4,571			3			*21*
						0,25 x ES + 3SST+150CW+6ST												
4	13	19	7	4	-10	-25	-40	-60										
outlet duct			GT diff. exh.			1 elbow			1	1335	4,4	8			3			*3*
						E silencer + 3SST+150CW+6ST												
-6	-1	-1	-18	-24	-44	-65	-81	-100										
stack outlet			GT diff. exh.			1 elbow			1	1335	4,4				0			*27*
						E silencer + SRD+SRO + Cor6									DI 5			
16	26	13	10	13	1	-22	-39	-62										
Exhaust Stack 13UHN																		
22	**30**	**24**	**18**	**17**	**4**	**-16**	**-28**	**-51**										***32***
Lube Oil Coolers 13URC (MBV-System)																		
FFC air int.			LOC air int.						3	1319	4,8				6			*17*
-20	-5	7	14	11	0	-22	-37	-55										
FFC air outl.			LOC air outl.						3	1319	4,7				3			*16*
-21	-6	6	14	10	-1	-23	-38	-56										
Lube Oil Coolers 13URC (MBV-System)																		
-17	**-2**	**10**	**17**	**14**	**2**	**-20**	**-35**	**-53**										***19***
Forced Cooling Water Cooler 13URB (MPR-System)																		
FFC air int.			LOC air int.						8	1320	4,8				6			*21*
-16	-1	11	19	15	4	-18	-33	-51										

Table 5 **OCGT Eskom Mossel Bay 3xSGT5-2000**
"Downwind" Sound Pressure Levels at the Receiving Point

RP4 @1100m west x=-1254m y=30m h=1,5m

A-weighted octave band sound pressure level [dB(A)]																		
Noise source			Spectrum			Trans./Insert.loss			Number	Dist	A_{gr}	Surface	diff	C_{met}	Dc[dB]	Time	ΔL	L_s
32	63	125	250	500	1k	2k	4k	8kHz		[m]	[dB]	[m²]	[dB]	[dB]	o.RW	[dB]	[dB]	dB(A)
FFC air outl.			LOC air outl.						8	1320	4,7				3			*20*
-17	-2	10	18	15	3	-19	-34	-52										
Forced Cooling Water Cooler 13URB (MPR-System)																		
-13	**2**	**14**	**21**	**18**	**6**	**-15**	**-31**	**-48**										***24***
Transformers 13BAT/BBT/BFT																		
13BAT TF UBF			GT gen. transf.						1	1323	4,7				9			*26*
-30	-7	17	23	21	9	-18	-35	-62										
13BBT TF UBE			UBE transf.						1	1322	4,8				6			*10*
-49	-22	3	9	-2	-11	-38	-59	-87										
13BFT TFUBD			UBD transf.						2	1324	4,8				6			*6*
-50	-26	-1	5	-6	-15	-42	-63	-91										
Transformers 13BAT/BBT/BFT																		
-29	**-6**	**17**	**23**	**21**	**9**	**-18**	**-35**	**-62**										***26***
Power Control Centers 13UBA01-02																		
13UBA, ACU			UBA, ACU						2	1323	4,7				6			*9*
-20	-8	1	6	5	-8	-33	-52	-75										
Power Control Centers 13UBA01-02																		
-20	**-8**	**1**	**6**	**5**	**-8**	**-33**	**-52**	**-75**										***9***
Unidentified Noise Sources Unit 13																		
UIF-NC			UIF-NC						1	1329	4,7				3			*33*
10	23	27	29	23	9	-17	-36	-57										
Unidentified Noise Sources Unit 13																		
10	**23**	**27**	**29**	**23**	**9**	**-17**	**-36**	**-57**										***33***
Control Room Building 00UCA/UBA (Clients Scope of Supply)																		
ACSCU 1			ACSCU			[SL 2/1/5]			2	1219	4,7				6			*9*
-19	-7	3	7	0	-17	-33	-43	-60										
ACSCU 2			ACSCU			[SL 2/1/5]			4	1219	4,7				6			*12*
-16	-4	6	10	3	-14	-30	-40	-57										
ACSCU 3			ACSCU			[SL 2/1/5]			2	1219	4,7				6			*9*
-19	-7	3	7	0	-17	-33	-43	-60										
RFG unit			HVAC RFU			[SL 2/1/5]			2	1219	4,8				6			*3*
-8	-11	-6	0	-6	-10	-21	-34	-54										
Control Room Building 00UCA/UBA (Clients Scope of Supply)																		
-7	**-1**	**9**	**13**	**7**	**-8**	**-20**	**-32**	**-51**										***15***
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																		
fuel oil transfer pun			FOTF pump						1	1114	4,8	70,79			6			*20*
-32	-8	10	16	17	9	-10	-23	-47										
fuel oil forwarding p			FOFW pump						1	1114	4,8	70,79			6			*19*
-37	-6	12	14	15	8	-9	-21	-40										
Fuel Oil Supply and Handling Systems UEL/UEH (Clients Scope of Supply)																		
-30	**-3**	**14**	**18**	**19**	**12**	**-7**	**-19**	**-39**										***23***
overall level																		
27	**37**	**36**	**37**	**34**	**22**	**0**	**-14**	**-31**										***42***

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ANNEXURE U:

LIST OF REGISTERED I&APs

Name	Organisation	Address 1	Address 2	Address 3	Address 4
Ignatius Muller	Patrysfontein	P O Box 271	Mossel Bay	6500	
Quintus Muller	Patrysfontein and Leeuwin	P O Box 271	Mossel Bay	6500	
Cornelius J Muller	Haelkraal	P O Box 185	Mossel Bay	6500	
Henry Muller	Bartelsfontein	P O Box 179	Mossel Bay	6500	
Jacque & Hanalie Devilliers	Farm Harterus	P O Box 742	Mossel Bay	6500	
Morris Barnard	Buffels Kloof 205	P O Box 46	Groot Brak	6525	
Johnny Muller	Zuur Rug 207 & 208	P O Box 185	Mossel Bay	6500	
Pierre Muller	Leeuwin and Rooidrif	P O Box 402	Mossel Bay	6500	
Gilbert Muller	Arum Valley	P O Box 362	Mossel Bay	6500	
Stoffel Fivaz	Secretary: Voelvlei Farmers Union	P O Box 6	Johnson's Pos	6504	
Ivan Donian	Business Unit Manager: Cape Nature	Private Bag X6546	George	6530	
Eddie Kruger	Town Planner: Mossel Bay	P O Box 25	Mossel Bay	6500	
Danie Smit	DEAT	Private Bag X447	Pretoria	0001	
Neil Lambrecht	DEA&DP	Private Bag X6509	George	6530	
Carel Steyn	PetroSA: Manager: Optimisation and Development	Private Bag X14	Mossel Bay	6500	
Mr Koos Pretorious	South African Civil Aviation Authority: Airports Inspector Navaids & Comms	Private Bag X73	Halfway House	1685	
James Bredenkamp	Spoornet: Assistant Manager Estates	PO Box 1276	Joubert Park	2044	
Willie Boeije	National Energy Regulator: Senior Manager	PO Box 785080	SANDTON	2146	
K P Landman	Department of Minerals and Energy: Directorate Mine Surveying & Mapping: Senior Inspector: Mine Health and Safety	Private Bag X59	PRETORIA	0001	
Mr Elvin Harris	Department of Trade and Industry: Infrastructure Logistics Manager	Private Bag X84	Pretoria	0001	
Sipho J Sithole	Telkom	P O Box 1142	Port Elizabeth	6000	
Samantha Ralston	WESSA: Western Cape Region	P O Box 30145	Tokai	7966	
Olivia Andrew	EarthLife Africa	P O Box 176	Observatory	7935	
Prof Kevin Bennett	Energy Research Centre	Energy Research Centre, Dept of Mechanical Engineering	UCT	P Bag	Rondebosch, 7701

Henry Hill	Eden District Municipality Planning Dept	P O Box 12	George	6530	
Tonia Schonken	Mossel Bay Environmental Partnership	P O Box 732	Hartenbos	6520	
Marie de Klerk	Ward councillor	P O Box 10192	Dana Bay	6510	
Charl de Villiers	Conservation Unit Botancial Society of South Africa	Private Bag X10	Claremont	7735	
Johan du Preez	SusDev Solutions	P O Box 10621	Dana Bay	6510	
Gert Greeff	Estates Manager: Eskom Nuclear Sites				
Richard Malakasa	Alpha Holdings	3 Ennerdale Road	Pinelands	7405	
Barry Jacobs	Gourikwahuis	40 Hibiscus Avenue	Great Brak River	6525	
Danie Swanepoel	DEA&DP	Private Bag X6509	George	6530	
Riaan Smit	Eskom Distribution: Network Planning				
Liz Dekker	Eskom	P O Box 2015	George	6530	**EMAIL ONLY**
Michael Dyssel	UWC: Dept of Geography	Private Bag X17	Bellville	7535	
R Louw	Mossel Bay Artisan Association	27 Parade Street	New Hope Town	Mossel Bay	6501
T M Hector	Mossel Bay Artisan Association	27 Parade Street	New Hope Town	Mossel Bay	6505
Beverley Boer	Mossel Bay Environmental Partnership	106 Klipper Street	Mossel Bay	6506	
Chris de Jager	Farm Kleinberg/ Saaikamp	P O Box 1050	Hartenbos	6520	
Christo Kotze	Tuinroete Agri	P O Box 70	Mossel Bay	6500	
Nicola Mawson	Engineering News	P O Box 75316	Garden View	2047	
Eileen Green	PetroSA	Private Bag X14	Mossel Bay	6500	
O T Badenhorst	Tuinroete Agri Beperk	P O Box 70	Mossel Bay	6500	
J Lourens	PetroSA	Private Bag X14	Mossel Bay	6500	
Lyndon Metcalf	National Ports Authority	P O Box 1942	Mossel Bay	6500	
Frans Marx	Fontein Boerdery cc	P O Box 2052	Mossel Bay	6500	
Bennie & Hennie Pienaar	B&H Boerdery	P O Box 748	Mossel Bay	6500	
Erik Waterson	Matjiesdrift	P O Box 10694	Dana Bay	6510	
Johan van Rensburg	Fontein Wes	P O Box 109	Mossel Bay	6500	
Boyce Pretorius	Bartelsfontein	P O Box 263	Hartenbos	6520	
Mr GJ Oberholster	Residents Association of Dana Bay Conservancy	P O Box 10654	Dana Bay	6510	
Mr Darrel Britton		P O Box 829	Hartenbos	6520	