MAT.: Solicita tener presente lo que indica.

ANT.: Ord U.I.P.S N° 939 de fecha 19 de noviembre de 2013.

REF.: Expediente Sancionatorio N° F-24/2013

Santiago, 02 de diciembre de 2013.

Señor
Cristóbal Osorio V.
Jefe de Unidad de Instrucción de Procedimientos Sancionatorios
Superintendencia del Medio Ambiente
Miraflores N° 148 piso 7 Santiago
Presente

Con atención a Sra. Leslie Cannoni Mandujano, Fiscal Instructora del Procedimiento Sancionatorio

De nuestra consideración:

Sociedad Eléctrica Santiago S.A., representada por don Carlos Moraga Fuentes, ambos domiciliados en Avenida Jorge Hirmas N° 2964, Renca, Santiago, en procedimiento de sanción, expediente Sancionatorio N° F-24/2013, viene en solicitar tener presente lo siguiente:

Que, por medio del Oficio Ord U.I.P.S N° 939 de fecha 19 de noviembre de 2013, se procedió a realizar la aprobación condicional del Programa de Cumplimiento presentado por nuestra compañía en respuesta a la Formulación de Cargos.

El mencionado Ord. impuso a una serie de condiciones a la aprobación del Programa de Cumplimiento, que en síntesis implican acotar su plazo de ejecución a 4 meses, plazo dentro del cual la empresa debe alcanzar el cumplimiento del DS N° 146/1997 MINSEGPRES, sin importar para efectos del cumplimiento del programa propuesto, las acciones que sean necesarias cumplir dicho objetivo.

A fin de establecer si nuestra empresa estaba en condiciones de sujetarse a la citada condición, se pidió la opinión de Spectrum Acoustic Consultants Ltda, consultor internacional experto, contratado por nuestra empresa para evaluar el plan de acciones y metas diseñado para cumplir las exigencias a que se refiere este procedimiento sancionatorio. Se acompaña copia de la orden de compra respectiva de fecha 30 de octubre de 2013, el Curriculum Vitae del Sr. Andrew Corkill, Director de Spectrum Acoustic Consultants, y una copia del certificado de registro N°2139 de NQA, organismo de certificación europeo.

Esta consultoría, basada en visitas al Complejo, mediciones in situ, y criterio de experto, concluyó que bajo las condiciones fijadas de aprobación del programa de cumplimiento, su riesgo de incumplimiento sería alto. Se acompaña carta del Sr. Andrew Corkill, representante legal de

Spectrum Acoustic Consultants, que resume las conclusiones de la citada evaluación, y de las cuales se da cuenta a continuación:

- En primer término, se recomienda realizar mediciones de ruido de fondo, a fin de ajustar las modelaciones para determinar medidas de control de ruido apropiadas, y ajustar la metodología de medición para verificar cumplimiento del DS N° 146/1997 MINSEGPRES.

- La evaluación de cumplimiento del DS N°146/1997 MINSEGPRES en el Complejo fue efectuada hace más de diez años bajo condiciones de ruido de fondo distintas y que hoy han variado significativamente. En este sentido, se concluye que las mediciones del ruido de fondo deben ser actualizadas a la situación real, ya que en la actualidad, el tráfico en la autopista, ubicada detrás de la planta, es muy alto, factor que además se ve afectado por la dirección del viento. Ante ello, además de efectuar la medición del ruido de fondo se recomienda que debe incorporarse al modelo, la correlación con las diferencias según dirección del viento, a fin de poder determinar con precisión cuánto es el ruido aportante del Complejo. Esta medición del ruido de fondo se empezará a realizar a principios de diciembre.

- Por otra parte, se enfatizó que resulta indispensable realizar las mediciones de las principales fuentes de emisión de ruido en la planta con data actualizada, para determinar las medidas adecuadas para cumplir los valores de inmisión de la normativa vigente. De esta forma, además de la necesidad de contar con datos actualizados de ruido de fondo, se requieren nuevas mediciones de las fuentes del Complejo, a partir de las cuales será posible construir una nueva modelación de ruido, que permita identificar en forma en que se propaga el ruido y por lo tanto, servir de base para definir las medidas necesarias para alcanzar el cumplimiento de la normativa. Estas mediciones sólo se pueden realizar una vez que la Central entré en servicio, fecha que se estima para marzo del año 2014. El resultado de esta nueva modelación y reporte de mitigaciones a implementar se espera para julio 2014.

- Las acciones anteriores son indispensables en razón de la antigüedad de los datos, por lo cual no existe modelación adecuada para determinar medidas que serán efectivas para mitigar las emisiones de ruido, y con los datos que se cuenta, realizar una modelación en base a ellos, conduciría errores en la determinación de las medidas de mitigación a implementar, e incluso con resultados contraproducentes para cumplir los valores de inmisión exigidos por la normativa vigente.

- De esta forma, determinar las medidas adecuadas para cumplir no solo el D.S. N° 146/97, sino también los límites de inmisión del DS. 38/2011 del Ministerio del Medio Ambiente, requiere avanzar en la construcción de las bases del modelo desde ahora, para luego cargar la información de datos de las mediciones realizadas en la planta, los datos de ruido de fondo y correlación con dirección del viento.

- En base a estas consideraciones, no resulta razonable el plazo de 4 meses para implementación de todas las medidas que son necesarias para asegurar el cumplimiento de los niveles de inmisión normados, ya que la extensión real de un programa de cumplimiento, requiere, bajo criterio técnico de experto, de aproximadamente 17 meses de implementación, considerando la situación actual de despacho de la Central esperada para marzo de 2014.

En conclusión, desde el punto de vista de la intención de la empresa de dar cumplimiento a la normativa que le resulta aplicable, se opta por no perseverar en el programa de cumplimiento. Lo anterior es sin perjuicio del compromiso de diseñar y ejecutar un plan de acciones que se ajuste a los tiempos que son necesarios técnicamente para definir, diseñar y ejecutar las medidas de cumplimiento, y por otra parte, resulte efectivo, en el sentido de no incurrir en el despropósito de ejecutar medidas que no sean aptas para dar cumplimiento a las exigencia ambientales.

De esta forma, se reafirma el compromiso de **Sociedad Eléctrica Santiago S.A.**, de realizar las acciones que sean necesarias para cumplir con la normativa ambiental que se estima infringida, y para el cual se presentará ante su Superintendencia un plan de acciones actualizado, que dé cuenta de los plazos y las medidas a comprometer.

POR TANTO, como petición concreta, solicito tener presente las razones por las cuales se ha optado por no perseverar en el Programa de Cumplimiento y a proceder a diseñar e implementar un plan de acciones actualizado, destinado a asegurar el cumplimiento de la norma ambiental vigente y los nuevos valores inmisión del D.S. 38/2011 .

Sin otro particular, le saluda atentamente.

Carlos Moraga Fuentes
Sociedad Eléctrica Santiago S.A

Adj:

1. Copia de orden de compra de Sociedad Eléctrica Santiago, de fecha 30 de octubre de 2013.
2. Copia de Curriculum Vitae del Sr. Andrew Corkill, Director de Spectrum Acoustic Consultants.
3. Copia de certificado de registro N°2139 de NQA, organismo de certificación europeo.
4. Copia de Carta Ref ARC6551/13347 del Sr. Andrew Corkill, Director de Spectrum, de 29 de noviembre de 2013. que resume su evaluación del programa de cumplimiento.

ORDEN DE COMPRA

Eléctrica Santiago
una empresa AES Gener

Sociedad Eléctrica Santiago S.A.
RUT: 96.717.620-6
Jorge Hirmas #2964
() Renca, Santiago, Chile

Proveedor 10014513
Nombre: SPECTRUM ACOUSTIC CONSULT

Direccion: 27-29 HIGH STREET
Telefono: 44(0)1767318871
E-mail: ACorkill@sprectrumacoustic.com
Web:

Orden de compra: 4500108676
Fecha de orden: 29/11/2013
Nº de Cotización:
Clausula de compra:
Forma de Pago: Contado 30 días Fecha Emisión
Vía de embarque:
Pais de origen:
Moneda: GBP
Documentos de embarque avisar a: Comex.aesgener@aes.com
Enviar los documentos a: Jorge Hirmas 2969, Renca Santiago Chile
Fecha de entrega: 30/10/2014

N Ítem	Cód. Art.	Descripción	Cantidad	U d M	Precio	Precio Total
00010		SERV. ASESORIA EN ING.ACUSTICA	60	H	95,00	5.700,00

Comentarios:
Our ref: ARC6544/13347

COMPRADOR	APROBADOR		
		Bruto Total	5.700,00
		Desc. Total	0,00
NICOLAS ANTONIO VILLALOBOS DIAZ	**29.11.2013 ALEXIS ZEBALLOS DEL PINO**	**Neto Total**	5.700,00
		Valor Total	5.700,00

CONDICIONES GENERALES

1. Toda factura o guía de despacho de entrega de mercadería del proveedor, deberá indicar claramente el número de orden de compra de AES o sus filiales.

2. El monto a facturar deberá estar expresado en la misma moneda indicada en la orden de compra.

3. Copias digitales de los documentos de embarque deberán ser enviados vía correo electrónico o fax a AES Gener S.A. en el menor plazo posible, entendiendo un plazo máximo de 48 horas para envíos marítimos a contar desde la salida del embarque desde el puerto de origen. Esta documentación deberá ser digitalizada en formato .pdf y en archivos independientes. En el caso de envíos aéreos, las copias de los documentos en formato .pdf deberán ser enviados vía correo electrónico o fax a AES Gener S.A. en el momento en que se emite la guía aérea (AWB)

4. El proveedor deberá enviar la documentación original de embarque vía courier a AES Gener S.A., Comercio Exterior, Jorge Hirmas 2960 Renca Santiago de Chile, Chile.

5. Los documentos de embarque originales que deberán ser enviados por el proveedor a AES Gener S.A. son:
5.1) Factura comercial, Lista de empaque, Conocimiento de embarque, Guía aérea, Carta de porte.
5.2) Certificado de origen, generado en el formato requerido según el Tratado de Libre Comercio (TLC) que aplique. En la Unión Europea el certificado es EUR1 en formato original o leyenda en factura comercial original cuando proceda; para MERCOSUR deberá enviarse en original y para: Canadá, México, EEUU, Australia, China, Japón, Corea, Colombia, Ace, EFTA, Panamá e India, el certificado a enviar es el requerido bajo cada TLC.

6. Los pagos de las facturas estarán sujetos al cumplimiento en cantidad y calidad de la mercadería recibida por AES Gener S.A. o sus filiales, de acuerdo a los términos de la orden de compra o contrato. Adicionalmente, se acuerda que AES Gener S.A. o sus filiales no asumirán ninguna responsabilidad por pagos si los incumplimientos y/o retrasos son ocasionados por el proveedor.

7. La orden de compra estará sujeta a las leyes y regulaciones aplicables en Chile.

8. Disposiciones sobre cumplimiento:
8.1) El Proveedor cumplirá acabadamente con todas las leyes aplicables de los países en donde deban cumplirse las obligaciones establecidas en la presente orden de compra, así como con todas las leyes aplicables de los Estados Unidos en materia de corrupción, lavado de dinero, terrorismo, sanciones económicas y boicots, inclusive, entre otras, la U.S. Foreign Corrupt Practices Act (Ley de Estados Unidos sobre Prácticas Corruptas en el Extranjero, "FCPA")
8.2) En el cumplimiento de sus obligaciones en virtud de esta orden de compra, el Proveedor y sus ejecutivos, directores, empleados, agentes y representantes convienen en que se han abstenido y se abstendrán de:
a) directa o indirectamente, ofrecer, dar, hacer, prometer, pagar o autorizar el pago de una suma de dinero, regalo u objeto de valor a cualquier persona que actúe como funcionario o empleado de un gobierno o a un funcionario o empleado de un departamento, ministerio, secretaría, organismo o repartición del mismo, o de una organización pública internacional, o cualquier persona que actúe en carácter oficial en nombre de dicho gobierno, departamento, ministerio, secretaría, organismo o repartición, o un candidato o la persona designada para ocupar un cargo político o gubernamental, o a un partido político; o
b) recibir, transferir, retener, utilizar u ocultar fondos provenientes de un actividad delictiva, o contratar o de cualquier otra manera negociar con una "persona designada", es decir, una persona o entidad cuyo nombre está incluido en alguna de las listas emitidas por los Estados Unidos u organizaciones internacionales tales como las Naciones Unidas por estar involucrada en lavado de dinero, terrorismo o narcotráfico o por haber violado embargos económicos o de armas.
8.3) Todas las solicitudes de pago en virtud de esta orden de compra deberán estar acompañadas por facturas detalladas y precisas que describan específicamente los trabajos, servicios o equipos por los cuales se solicita el pago.
8.4) El Proveedor reconoce haber recibo una copia del Código de Conducta de AES.
8.5) En el caso de que el Proveedor tome conocimiento o advierta que ha tenido lugar una violación de las Cláusulas 8.1 y 8.2 precedentes, el Proveedor deberá informar de inmediato a AES acerca de dicha violación.
8.6) Cualquier violación a estas disposiciones constituirá causa suficiente para que AES, actuando de buena fe, termine la orden de compra en todo o en parte, en cuyo caso el Proveedor perderá todo derecho a reclamar pagos adicionales que correspondan en virtud de esta orden de compra, excepto los pagos por servicios previamente prestados en virtud de esta orden de compra, además de ser considerado responsable por los daños y perjuicios causados o estar sujeto a los recursos disponibles en virtud de la ley aplicable.

Personal Profile

Andrew Corkill BSc (Hons), MSc, MIOA

Director

Contact information:
Email: acorkill@spectrumacoustic.com
DDI: 01767 603208
Mobile: 07710 077196

After graduating with a degree in Building Technology from the University of Manchester in 1975 Andrew worked for two firms of acoustic consultants before returning to University to advance his studies, gaining a Masters Degree in 1977 from the University of London in Acoustic and Vibration Technology, as well as Diplomas from both Imperial College and Chelsea College.

After further work in acoustic and noise consultancy Andrew joined ICI Acoustics in 1980, appointed to head up acoustic design and develop a new external consultancy group in what was then solely a manufacturer of specialist engineering noise control solutions. By 1989, after a series of strategic reviews within ICI, Andrew led a team which negotiated a management and employee buyout. The group was renamed Spectrum Acoustic Consultants. Andrew has continued to direct Spectrum through a period of sustained steady growth so that now the firm is recognised as one of the world's leading noise and vibration consultancy groups.

Andrew brings to the firm a wealth of experience especially in the petrochemical and power industries, having headed up major projects within Europe, the Middle East, the Far East and South America.

Areas of Expertise

- Offshore platforms
- Gas plants and refineries
- Gas storage and transmission
- CCGT and coal fired power stations
- Water treatment
- Noise control design
- Environmental statements
- Environmental permits
- 3rd party audits
- Expert Testimony

Qualifications

BSc (Hons) in Building Technology from the University of Manchester
MSc in Acoustic and Vibration Technology from the University of London
Corporate Member of the Institute of Acoustics

When not working.....

Andrew is an active orchestral violinist and Chamber Music player, and performs classical and 20th century music regularly in the Hertfordshire area. He also enjoys painting and drawing. For sport, he enjoys mountain biking, dinghy sailing and jogging. He is married and has two grown up children.

Certificate of Registration

nqa

This is to certify that the Quality Management System of

Spectrum Acoustic Consultants incorporating Wigan Office
27-29 High Street, Biggleswade, Bedfordshire, SG18 0JE

applicable to

Consultancy in acoustics, noise control, pulsation and surge analysis and vibration

has been assessed and registered by NQA against the provisions of

BS EN ISO 9001 : 2008

This registration is subject to the company maintaining a quality management system, to the above standard, which will be monitored by NQA.

Certificate No:	2139
Date:	16 July 1993
Reissued:	26 June 2013
Valid Until:	26 June 2016
EAC Code:	35

Certification Director

UKAS QUALITY MANAGEMENT
015

Ref: ARC6551/13347

Date: 29 November 2013

Spectrum
ACOUSTIC CONSULTANTS

Andrés Cabello
Gerente de Medio Ambiente
AES Gener S.A.
Rosario Norte 532, piso 19, Las Condes
Santiago, Chile

Dear Sirs

RENCA CCGT - NOISE REVIEW NOVEMBER 2013

1. NOISE HISTORY OF THE RENCA CCGT POWER STATION

Spectrum assisted AES Gener meet the DS 146 noise limits in 2000-2002 with a programme of noise mitigation measures during the commissioning phase of this new CCGT unit.

It is understood that noise limits were achieved at that time.

The agreed regular noise measurements at residential positions have shown a significant increase in noise since then.

2. CHANGE IN THE NOISE ENVIRONMENT SINCE CONSTRUCTION OF COSTANERA NORTE

Spectrum has visited the site during plant shutdown, and note that since their previous noise testing, a new major highway Costanera Norte has been constructed, and this has increased the background noise levels within the area.

This will mean that the noise testing will indicate the CCGT is exceeding the DS146 limits when it may be still within the limits.

3. MORE DETAILED INFORMATION REQUIRED OF THE INCREASED BACKGROUND NOISE LEVELS.

The government authorities require the background noise levels to be subtracted from the measured noise levels during plant operation, so that the noise from the CCGT plant alone can be determined and compared with the limits in DS 146.

During this latest visit, Spectrum has sampled background noise and noted that this varies significantly with wind direction. Accordingly Spectrum have advised that additional urgent background measurements should be made as soon as possible and these should be correlated with wind direction. This will provide accurate background noise corrections for future measurements at the agreed receptor positions and improve the analysis.

This data can also be used to correct historic data obtained over the last 12 months, by correlating that data with historic wind direction data recorded at the CCGT power station site.

The corrections using the more accurate background noise measurements will show significantly lower levels of noise from the CCGT station. It is however not known whether this will be in full compliance with the current DS146 limits at all receptor locations.

Spectrum has recommended AES Gener discuss this improved background correction method urgently with the relevant government agencies and seek an extension period in the compliance programme.

4. NEW DS 38 APPLIES FROM 2014

The new DS38 law represents a new challenge to the CCGT station. Applying remedial noise mitigation for an existing plant that has been operating for 12 years, is more difficult than constructing a new CCGT plant to the new noise limits.

A further reduction in noise to meet these new limits is currently being evaluated for the plant.

5. DETAILED NOISE MODEL TO IS0 9613

At this moment, during the current outage of the CCGT station, a new Computer Noise model is being built in accordance with the algorithms in ISO 9613-1 and ISO 9613-2[1]. This is a complicated propagation model and uses building elements sized accordingly to represent both the elements of the power station itself as well as the residential community. It also includes the topography of the area.

With the plant once more operational in early 2014, the urgent priority will be for the AES Gener locally appointed specialist noise consultant firm, to undertake a comprehensive near-field survey of each individual source of noise on the plant. This will include a remeasure of the noise emanating from the top of the stack.

This new data for each noise source will be entered into the noise model currently being constructed.

The critical background noise measurement and corrections analysis and also the new noise model construction will be complete early 2014 ready for input data to be obtained from the restarted CCGT plant in March/April.

This information will be processed before being input into the new model. The input data and processing will be reviewed by Spectrum, as the partner acoustic consultant, before proceeding with noise model simulation.

The first model simulation of the existing noise from the CCGT will be compared with site noise measurements at receptors and also at mid-field locations close to the site boundary. Adjustments will be made to ensure good correlation. This process will validate the computer model for use in developing additional noise mitigation if this is necessary to meet the new DS38 limits.

6. DEVELOPMENT OF NOISE MITIGATION OPTIONS

The noise modelling will identify and rank all the main contributory noise sources to the receptor positions. The noise consultant teams will develop outline noise mitigation measures, and test their effect on the noise to the community through a series of reruns of the noise model.

Options for noise mitigation will be further developed with AES Gener engineers to ensure feasibility and compatibility with the operation of the plant. Budget costings will also be obtained for any necessary noise mitigation measures.

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[1] ISO 9613-2:1996 *Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*

The introduction of any noise mitigation measure will have some effect on the efficient operation of the CCGT plant. Measures will affect maintenance plans and may reduce the overall energy efficiency of the plant. It is important that those measures are also effective and sustainable engineering solutions.

7. BAT AND ALARP

Spectrum has worked on over 200 power projects worldwide, and notes that many countries are adopting benchmarking and other standards for environmental impacts. Best Available Technology (BAT) is now routinely sought by government regulatory authorities. Utilising BAT will result in levels of impact, in this case noise, that are As Low As Reasonably Practical (ALARP).

Many countries are using this procedure particularly for existing plants where retrofitting environmental improvements can be difficult.

8. NOISE REDUCTION STUDY REPORT

A fully detailed report will be prepared covering the noise modelling, the noise mitigation development and other items such as engineering feasibility, effect on the plant and implementation cost. The expected noise levels with mitigation will clearly be stated within the report.

This report will be shared with the relevant government agencies and the implementation plan and programme discussed.

Implementation of remedial noise control on existing established plants can be very difficult. Implementation will have to be planned and work carried out to a practical and realistic programme. Some plant outages will be necessary during the implementation and this will have a significant revenue implication for AES Gener.

9. GOVERNMENT AND OTHER STAKEHOLDER LIAISON

AES Gener will undertake the Noise Studies and the Implementation Plan in a professional manner to ensure that they are satisfied that the expected noise reductions will be achieved. During this process AES will regularly inform and consult both the relevant government authorities and other Stakeholders, reporting progress on the noise improvements project.

10. CONCLUSIONS

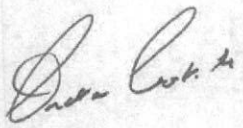
AES Gener are using the opportunity of the current outage to progress additional background noise studies and the construction of the new Computer Noise Model to ISO 9613

Progress during 2014 firstly with the computer noise simulations and mitigation studies and then on the related design engineering work and proposed programme for implementation, will be formerly reported to the relevant government agencies.

The noise mitigation will then be implemented according to a detailed plan. Each stage of the plan will need to be carried out to ensure that the noise mitigation is well engineered and constructed and therefore effective in service for many years.

Throughout this programme of noise improvements, AES Gener will be seeking the support of all government authorities, stakeholders and residents in this challenging project.

Yours faithfully



Andrew Corkill
Director

Enc.

- CV for Andrew Corkill
- ISO 9001 Quality Certificate
- Sample of some gas fired CCGT project

Gas Fired Power Generation & CHP Projects

This is a list of some projects in the gas fired power generation and CHP sector for which Spectrum has provided acoustic consultant or noise consultancy services.

Client	Project	Description of Services
Abu Dhabi Power Co	Al Ayn Power Station, UAE	Acoustic design of intake and exhaust silencers for 12-off GE Frame 6 gas turbines. For Aker Solutions ASA
ADNOC	Project 545 On-shore gas project, UAE	Noise control design review and site survey of GE Frame 6 gas turbine generators manufactured by Nuovo Pignone. For Bechtel Technip Joint Venture
AES (Chile)	Nueva Renca CCGT Plant, Santiago, Chile	Computer modelling, noise surveys and noise reduction study (Phases 1 & 2). Government liaison. For Electrica Santiago
AES (Chile)	Old Renca (oil-fired) upgrade project, Santiago, Chile	Computer modelling, feasibility study and Environmental Statement for conversion oil-fired to CCGT plant. For Electrica Santiago
AES (UK)	Tyneside Power Station, UK	Environmental Noise Impact Assessment. For Parsons Brinkerhoff
Arjo Wiggins	Buckland Mill CHP Plant, UK	Investigation of low frequency environmental noise emissions. For Wellman Robey
BP Energy	Four UK sites at: Enichem New Hythe , Ford Halewood, Heinz Foods Wigan and Kellogs Trafford UK	Environmental Statement, surveys, modelling and outline design.
Carlton Power	Yelland CCGT Power Station, UK	Environmental Statement, surveys, modelling and outline design. For PB Power
Carrington Power	860MW CCGT power station, Carrington, Cheshire, UK	Noise modelling and preparation of noise section of Environmental Statement. For SKM-Enviros
China Light and Power	Penny's Bay Power Station, Hong Kong	Three GE 9E gas turbines in open cycle in 360 MW power station. Computer simulation of environmental noise. Building acoustic design. Acoustic design of GT inlet silencers. Noise control design report for Aker Solutions ASA
Croydon Energy	Croydon Power Station, UK	Environmental Statement, surveys, noise modelling and outline design. For Rolls-Royce Power Ventures
Cyprus Electricity Authority	Moni Power, Station, Cyprus	Predictive Environmental Noise Study. For Parsons Brinkerhoff
Derby Cogeneration Ltd	Rolls Royce Derby, Cogeneration Project, UK	Predictive environmental noise control study and EIA, for Parsons Brinkerhoff. Detailed noise consultancy and measurement services. For Rolls Royce Industrial Power Systems Limited

Client	Project	Description of Services
EDF Energy	1,300 MWe CCGT power station at West Burton, Retford, Notts, UK	Support through planning process. Negotiations to relax noise limit condition granted under Section 36 of Electricity Regulations. Noise modelling during detailed design. Advice to EDF – CIT (Contractors). Background and construction noise monitoring.
Electricity Authority of Cyprus	Vasilikos Power Station Phase III, Cyprus	Background noise survey, noise modelling and preparation of Environmental Noise Impact Assessment. For PB Power
GEC Alsthom (now Alstom)	Smurfit Townsend Hook CHP Plant, UK	Background environmental noise survey
GM Waste	Bolton TRF, UK	Environmental Statement, surveys, modelling. For PB Power. Commissioning tests for Alstom
Great Yarmouth Power (now npower)	CCGT Power Station, Great Yarmouth, UK	Audit of noise control design. Commissioning noise tests. For Great Yarmouth Power
Gulf Oil, UK	Milford Haven Cogen Plant, UK	Environmental noise impact measurement and assessment. For Gulf Oil
Heartlands Power Ltd	Fort Dunlop Simple Cycle Power Station, UK	Two 50MW Industrial Trent gas turbines. Issue of complete noise specifications. Environmental Noise Simulations. For Rolls-Royce Industrial Power Systems
Hyder	Chester Sewage Treatment Works CHP Plant, UK	Acoustic design and project management for installing noise control measures to allow 24 hour operation of CHP plant. For Welsh Water
Idaho Power	Idaho Power Station, USA	Environmental noise study and outline design. For Mowlem Engineering
Independent Power Generators	Sutton Bridge Power Station, UK	Environmental Noise Audit on behalf of owners. For PB Power
Keadby Power	Keadby Power Station, UK	Issue complete noise specifications; outline acoustic design of all buildings and noise control equipment. Engineering acoustic design of intake silencers for 2-off GE 9F gas turbines, each rated at 220 MW. Environmental noise simulations. Preliminary and final noise commissioning trials. For Aker Solutions ASA
Langage Energy Park	Langage Power Station, Plymouth, UK	Environmental Statement, surveys, modelling and outline design. For Langage Power
Marubeni Europower	Marmara CCGT, Turkey	Post commissioning noise measurements/advice on environmental and occupational noise problems associated with a new dual turbine 480 MW CCGT plant
Montell-Carrington	Montell-Carrington CHP, Trafford, UK	Environmental Statement, surveys, modelling and outline design. For PB Power
New Jersey Utility Co.	GE Frame 6 CHP Plants, USA	Background site noise survey and environmental noise impact study of proposed gas turbine plant on three sites. For Aker Solutions ASA
Northern Electric	Scarborough GT Plant, UK	One 50MW Industrial Trent gas turbine in Simple Cycle. Environmental Noise Impact Assessment. For Parsons Brinkerhoff

Client	Project	Description of Services
Northern Territories Electricity Commission	Channel Island Power Station, Australia	Acoustic and engineering design of inlet and exhaust silencers, acoustic lagging and enclosure systems for 6-off GE Frame 6 gas turbines for manufacture by Aker Solutions ASA
Nuclear Management Partners/ Sellafield Limited	Fellside standy boiler project	Detailed noise prediction studies and assessments. For Day and Zimmerman and Worley Parsons
PEMEX/BOC	Gas plant power modules, Mexico	Independent audit of noise control design. For BOC
Rolls-Royce Power Ventures	Exeter Simple Cycle Power Station, UK	One 50MW Industrial Trent gas turbine in Simple Cycle. Environmental Noise Impact Assessment. For Parsons Brinkerhoff
Rolls-Royce Power Ventures	Filton CHP Plant, UK	One 50MW Industrial Trent gas turbine providing combined heat and power. Environmental Noise Impact Assessment. For Parsons Brinkerhoff.
Rolls-Royce Power Ventures	Greenwich Power Station, London, UK	Preliminary Noise Control Study. For Parsons Brinkerhoff.
RWE npower	Fawley Co-Generation Plant, UK	One GE Frame 9E gas turbine providing combined heat and power. Issue of complete noise specification and running of computer noise model to ensure compliance with environmental noise criteria. For RWE npower Cogen
RWE npower	Dow Corning, Barry, South Wales	Evaluation of on-site and environmental noise. For RWE npower
RWE npower	Bridgewater Paper CHP, UK	Feasibility, Environmental Statement, computer modelling, survey and outline noise design for RWE npower. Detailed noise design for Kvaerner Construction
RWE npower	Philips Petroleum CHP, UK	Noise commissioning tests for Philips Petroleum. Further noise reduction measures design. For Kvaerner Construction
RWE npower	Cwmparc, Treorchy, Wales (small gas engine)	Environmental Statement, surveys, modelling and outline design. For RWE npower
RWE npower	Hem Heath Colliery, Stoke UK (small gas engine)	Environmental Statement, surveys, modelling and outline design. For RWE npower
RWE npower	Staythorpe 1,600 MWe CCGT Power Station, Newark, Notts, UK	Background Noise Survey. Construction noise surveys and reporting. Support with noise modelling for EPR Permit. Advice on noise control. Noise commissioning. For RWE npower
RWE npower	Hamilton Industrial Park CHP Plant, UK	Background Noise Survey and Environmental Noise Assessment. For RWE npower
RWE npower	BASF Teesside CHP Station, UK	Predictive environmental noise control study and EIA. For RWE npower
RWE npower	Killingholme Power Station, UK	Environmental and Occupational Noise evaluation of Power Station comprising 2-off ABB 13E gas turbines. For RWE npower

Client	Project	Description of Services
RWE npower	Deeside Power Station, UK	Environmental and Occupational Noise and evaluation of Power Station comprising 2-off ABB 13E gas turbines. For RWE npower
RWE npower	Didcot 'B' Power Station, UK	Construction noise monitoring and acoustic consultancy support through commissioning phase of project. For RWE npower
RWE npower	SCA Aylesford, CHP Plant, UK	Noise surveys; design of gas turbine inlet silencer and lagging systems. Specification of noise control. For John Brown Engineering
RWE npower	Little Barford Power Station, UK	Noise test procedures developed and final noise testing carried out for GEC Alsthom on complete station and for European Gas Turbine (EGT) for the anti-icing system. Noise monitoring during steam venting trials, for RWE npower
RWE npower	Elf Oil Milford Haven CHP Station, UK	Predictive environmental noise control study and EIA. For RWE npower
RWE npower	2,000 MWe proposed CCGT power station at Willington, Derbyshire	Background noise surveys, outline noise control design, preparation of noise section of Environmental Statement.
RWE npower	Power stations at Diageo Brewery, St James' Gate, Dublin, and Dundalk, Eire	Occupational noise assessments
RWE npower	2,000MWe CCGT power station at Pembroke, Wales	Ongoing noise monitoring during construction phase
RWE npower	2,000 MWe CCGT power station at Tilbury, Essex, UK	Background noise surveys, outline noise control design, preparation of noise section of Environmental Statement.
Saskatchewan Power Corporation	Meadow Lake Power Station, Canada	Site noise survey to establish existing noise levels from GE Frame 6 gas turbine. Remedial noise control treatment and resurvey. For Aker Solutions ASA.
Scottish & Southern Energy	ICI Runcorn CHP Project, UK	Environmental Noise Impact Assessment. For Scottish & Southern Energy
Scottish & Southern Energy	Burghfield and Chickerell Power Stations, UK	Preliminary Noise Control Study. For Rolls-Royce Industrial Power Systems
Scottish & Southern Energy	BPB Davidson CHP Plant, Aberdeen, UK	Preliminary noise evaluation. For Parsons Brinkerhoff
Scottish & Southern Energy	Weymouth Power Station UK	Study of low frequency environmental noise. Recommendations. For Scottish & Southern Energy
Scottish & Southern Energy	Kimberly Clark CHP, Barrow, UK	Environmental Statement, surveys, modelling and outline design. For BP Scottish & Southern Energy
Scottish & Southern Energy	Kimberly Clark CHP, Northfleet, UK	Environmental Statement, surveys, modelling and outline design. For Scottish & Southern Energy
Scottish & Southern Energy	Keadby 2, UK	Environmental Statement, surveys, modelling and outline design. For Scottish & Southern Energy

Client	Project	Description of Services
Scottish and Southern Energy	Peterhead Power Station, UK	Two GE 9E gas turbines in open cycle in 240 MW power station. Issue noise specifications. Computer simulation of environmental noise. Review vendors equipment proposals. For Aker Solutions ASA
Scottish and Southern Energy	Salt Union, Runcorn CHP Project, UK	Predictive environmental noise control study including computer modelling. Audit designs of vendors. For Senior Thermal Industrial Boilers Division
Scottish and Southern Energy	800 MWe CCGT power station, Baglan Bay, Port Talbot, Wales	Completion of pre-construction background surveys and provision of advice, relating to consents and design, to project manager
SECWA	Power Station, Perth, Australia	Site survey and noise study of GE 9E gas turbine. For Aker Solutions ASA
Severn Power/Siemens Power Generation	800MWe CCGT, Uskmouth, Wales	Noise monitoring during commissioning. Associated advice regarding discharging planning conditions. For Siemens Power Generation
Shengli, Liao-He and Zhong-Yuan Petroleum Bureau	GE Frame 6 CHP Power Stations, People's Republic of China	Noise control design study and outline designs of gas turbine exhaust silencers. For Aker Solutions ASA
Slough Heat & Power	Slough Trading Estates Power Station, UK	Low frequency environmental noise study. Surveys, recommendations and issue of silencer specifications. For Slough Heat & Power
Tenaga Nasional Berhad	Serdang and Pasir Gudang Power Stations, Malaysia	Full acoustic specifications and acoustic design of building fabric and ventilation system of two 360 MW gas turbine power stations. For Aker Solutions ASA
Viridian Power	Huntstown, Eire	Planning noise review. Project support for Viridian
Viridian Power	Sonoco Paper Mill CHP Plant, UK	Commissioning noise survey for West Engineering
Wessex Water	Power generation building, Avonmouth CHP	Outline noise design. For Siemens
Yorkshire Electricity (now npower)	Wakefield future peaking plant, UK	Preliminary noise study. For Yorkshire Electricity
Yorkshire Electricity (now npower)	Queens Medical Centre, Nottingham, CHP Scheme, UK	Completion of background noise survey and noise impact assessment for planning requirements and to set noise level specifications. For Yorkshire Electricity