GE Aero Energy Products
A GE Power Systems Business
16415 Jacintoport Blvd.
Houston, TX 77015

Customer: City of RIVERSIDE, CA
Description: LM6000 (2) New Generation Units
Project: Two (2) LM6000's for City of RIVERSIDE, CA
Date: 23 February 2004

LM6000 Main Unit Noise, Ancillaries, and SCR / CO Catalyst System Noise
NOTE: This is for a SINGLE SYSTEM -- For two systems, add +3 dB.
NOTE: for Chiller system, there is ONLY ONE REQUIRED per turbine unit.

Octave Band Center Frequency (Hz)

	Item Description	31.5	63	125	250	500	1K	2K	4K	8K	Lin.	A-Wt.
		Sound Power Levels (PWL's) in dB (ref 10^{12} W)										
		Sound Pressure Levels (SPL's) in dB (ref 20 Micropascals)										
	LM6000 NXGN Unit, PLUS SCR / CO SYSTEM COMBINED:											
	LM6000 NXGN Filter House PWL's:											
1.)	PWL: Combustion Air Filter Face, BOTH SIDES (no add'l face sil)		106	100	91	70	65	64	74	87	106.9	89.6
	PWL: Ventilation Air Filter Face, BOTH SIDES (no add'l face sil)		88	80	81	62	57	76	90	86	93.4	92.0
	PWL: Filter House Shell Surfaces:	99	96	92	98	86	80	79	79	74	103.1	91.5
	A-Weighted Octave Bands:		61	61	71	68	62	60	60	47		
	A-Wt to Linear Corrections:		26	16	9	3	0	-1	-1	1		
	PWL: Linear Octave Bands (ref Fouress spec)		87	77	80	71	62	59	59	48	87.9	74.1
	A-Weighted Octave Bands:		75	78	81	80	79	76	71	62		
	A-Wt to Linear Corrections:		26	16	9	3	0	-1	-1	1		
	PWL: Linear Octave Bands (ref Fouress spec)		101	94	90	83	79	75	70	63	102.4	86.8
	PWL: Inlet Silencer Shell Surfaces (Fouress spec)		101	94	91	84	79	75	71	63	102.5	87.0
	PWL. Combined Filter House: Faces, Silencer & House S	***99***	***107***	***102***	***100***	***88***	***83***	***82***	***90***	***90***	***109.5***	***96.4***
2.)	**Turbine-Generator Enclosure & Basebeam:**											
	PWL: Turbine Enclosure & Basebeam (combined)	101	97	101	100	97	89	87	87	83	106.8	97.9
	PWL: Generator Enclsoure & Basebeam (combined)	100	100	107	100	94	88	85	88	76	109.3	97.6
	PWL. Combined Turbine & Generator Enclosure & Base	***104***	***102***	***108***	***103***	***98***	***92***	***89***	***91***	***83***	***111.3***	***100.7***
3.)	**Generator Vent Fan Shell & Motor plus Damper Radiated Noise:**											
	PWL: Gen Vent Fan Motor & Shell Radiated noise-Centaxial		102	102	91	78	73	71	68	65	105.5	88.6
	PWL: Gen Vent Fan Damper (est.)		104	104	93	80	75	73	70	67	107.5	90.6
	PWL. Combined Generator Vent Fan & Damper		***106***	***106***	***95***	***82***	***78***	***75***	***72***	***69***	***109.6***	***92.7***
4.)	**Generator Exhaust Silencer & Damper Surfaces:**											
	PWL: Generator Exh. Exit:	106	90	97	87	77	78	76	73	68	106.5	85.6
	PWL: Generator Exh Sil Casing Surfaces	88	81	105	94	70	70	66	63	48	105.0	90.2
	Damper: (IBERDROLA)											
	INT: Lt half side	91	91	97	92	77	76	79	70	61	99.9	87.0
	INT Rt half side	92	92	99	93	76	77	80	72	63	101.2	88.0
	COR: Area Correction:	20.2	Sq.Ft.		2.7	dB	INT -> PWL area Correction					
	PWL: Total Damper:	97	97	104	98	82	82	85	76	68	106.4	93.3
	PWL. Combined Generator Exhaust Sil Surfaces & Exit:	***106***	***98***	***108***	***100***	***84***	***84***	***86***	***78***	***71***	***110.8***	***95.5***
5.)	**Turb Vent Exhaust Fan Motor & Shell Surfaces, & Exit:**											
	PWL: Turb Vent Fan Shell & Motor & Silencer Shell Surfaces	101	98	99	99	91	89	84	85	80	105.8	95.7
	PWL: Turb Vent Fan Exit -- No Directivity Included:	120	106	99	96	85	85	85	83	75	119.8	93.3
	90-Deg Directivity:	0	-1	-2	-5	-7	-10	-12	-15	-17		
	PWL: Turb Vent Fan Exit -- 90-Degree Directivity Included:	120	105	97	91	78	75	73	68	58	119.7	87.7
	PWL. COMBINED: Turbine Vent Fan Surfaces & Exit:	***120***	***106***	***101***	***100***	***92***	***90***	***84***	***85***	***80***	***119.9***	***96.3***
	PWL LM6000 Next-Gen Package Noise Total:	***120***	***112***	***113***	***107***	***100***	***95***	***92***	***94***	***91***	***121.5***	***104.1***

GE Aero Energy Products
A GE Power Systems Business
16415 Jacintoport Blvd.
Houston, TX 77015

Customer: City of RIVERSIDE, CA
Description: LM6000 (2) New Generation Units
Project: Two (2) LM6000's for City of RIVERSIDE, CA
Date: 23 February 2004

LM6000 Main Unit Noise, Ancillaries, and SCR / CO Catalyst System Noise
NOTE: This is for a SINGLE SYSTEM -- For two systems, add +3 dB.
NOTE: for Chiller system, there is ONLY ONE REQUIRED per turbine unit.

Item Description	31.5	63	125	250	500	1K	2K	4K	8K	Lin.	A-Wt.
	Octave Band Center Frequency (Hz)										
	Sound Power Levels (PWL's) in dB (ref 10^{12} W)										
	Sound Pressure Levels (SPL's) in dB (ref 20 Micropascals)										
COMBUSTION EXHAUST SYSTEM -- SCR w/ CO Catalyst System:											
Expansion Joint:											
PWL: Exhaust Exp Joint (Typical BRADEN, Integrated to sta	105	102	94	88	81	78	75	77	80	107.1	86.9
PWL: SCR / CO Catalyst System casing (per STI Quote)	118	111	104	101	91	77	73	71	60	119.0	95.2
PWL: Stack Exit (Includes Stack Horizontal Directivity)	123	120	107	96	85	80	77	77	79	124.8	97.0
PWL COMBINED - Stack Exit, SCR, and Exh Exp .	***124***	***121***	***109***	***102***	***92***	***83***	***80***	***81***	***83***	***125.9***	***99.4***
---> PWL Main Unit Plus Combustion Exhaust SCR / C	***126***	***121***	***114***	***108***	***100***	***95***	***92***	***94***	***92***	***127.2***	***105.4 <---***

NOTE: OTHER ITEMS NOT INCLUDED (DETAILS NOT FINALIZED)

Item Description	31.5	63	125	250	500	1K	2K	4K	8K	Lin.	A-Wt.
	Octave Band Center Frequency (Hz)										
	Sound Power Levels (PWL's) in dB (ref 10^{12} W)										
LM6000 Ancillary Skids:											
Steady-State Operating Skids:											
PWL: Sprint Skid (Unenclosed)	82	82	85	87	89	90	88	83	76	95.6	94.0
PWL: Water Injection Skid (Unenclosed)	86	99	102	102	106	104	104	100	97	111.6	109.8
PWL: Gas Filter Skid (Unenclosed)			56	64	67	65	60	54	48	70.9	68.8
PWL: Combined Ancillaries, Steady-State (Unenclosed)	87	99	102	102	106	104	104	100	97	111.7	109.9
RECOMMEND: Either add the drop-over enclosures, or put all inside of utility building.											
Intermittent (Startup & Shutdown) Skids:											
PWL: Auxiliary (Start) Skid (Unenclosed)	87	90	95	108	110	107	104	108	87	114.9	113.4
NOTE: This is an INTERMITTENT source, only occurs during startup, to start turbine, and also after shutdown, to rotate shafts while cooling.											
ALSO NOTE: This is UNENCLOSED, therefore, RECOMMEND either add the drop-over enclosure (full-weather enclosure) or put inside utility building.											
BOP Equipment Skids:											
PWL: Chiller Skid, Enclosed (Typical)		90	89	95	95	96	100	99	85	104.8	104.6
PWL: Gas Compressor Skid (Unenclosed, Typical 3-50%er'	101	109	105	110	105	102	103	96	91	114.7	108.7
(Based on compressor skid @ Western Farmers, in Anadarko, OK)											
PWL: Gas Cooler, Fin-Fan (Typical)	109	104	101	99	94	90	92	90	89	111.2	98.7
(Based on compressor fin-fan cooler @ Palm Springs, CA)											
PWL: Cooling Tower, 3 Fans Operating per one pair turbines		111	112	110	104	96	92	90	89	116.2	105.7

NOTE: There are numerous other BOP equipment items, some of which may be significant noise sources, esp. fans and skids assoc. w/ SCR System.
All things that are not included here, are omitted because I do not have sound power level data for those items.