CERTIFIED TEST DATA

TURBINE-DRIVEN GENERATOR SET

PACKAGE MODEL CGS001
ENGINE MODEL TAURUS 60S

PERFORMANCE ACCEPTANCE CERTIFICATE

CUSTOMER REFERENCE NO.: **YM53513 RW**

SOLAR PROJECT NO.: **70221**

CUSTOMER NAME:

SOLAR NAME:

UNIT NO.: **3**

SERIAL NUMBERS

PACKAGE	ENGINE	GEARBOX	GENERATOR
TG01587	**1060T**	**MAY01-00935**	**011025-03**

PACKAGE ACCEPTANCE APPROVAL

Solar Turbines Incorporated at San Diego certifies that the equipment identified above was tested as described herein and found to meet applicable requirements of the Solar Project Definition, the engineering specifications and the contractual requirements.

STATIC TEST ENGINEER: U. Tran DATE: 10/1/01

PRODUCTION TEST ENGINEER: S. Rueter DATE: 7/24/01

MANAGER, PRODUCTION TEST ENGINEERING: T.M. Huang DATE: 10CT01

PROJECT MANAGER: J. Plescia DATE: 10/1/01

TEST CONDITIONS AND TEST DATA

The generator package was tested with the turbine engine, reduction gearbox and generator mounted on the package base. The package controls were mounted on-skid and were used for the test.

The generator nameplate rating is 5,300 kw; rated voltage is 13,200 volts.

Full load for all package testing was determined by either the nameplate rating of the generator, or the engine performance curve adjusted for air inlet temperature, sea level and zero duct losses whichever was lower, per Solar Engineering Specification ES2091.

ITEM 1. ACCEPTANCE TEST

The attached figures labeled "Control Console Hardware Verification", "Universal Generator Set Acceptance Test" and "Final Visual Acceptance Test" are the specific test agenda for this unit. They were prepared to reflect contractual requirements and compliance with Solar Engineering Specifications ES2091 and ES2220.

ITEM 2. TURBINE ENGINE PERFORMANCE

The attached figure labeled "Taurus 60S, T7300 One-Shaft Engine Performance, Nat. Gas Fuel" depicts engine performance test data as noted on the computer analysis printout. The upper portion shows measured parameters and the lower portion shows calculated results corrected to conditions of standard temperature, sea level, and zero duct losses. The acceptance criteria for the engine performance results is contained in ES2091.

Based on the T5/T3 ratio determined during the engine performance test, the software base T5 with SIV open is 1226 degrees Fahrenheit and T5 with SIV closed is 1248 degrees Fahrenheit.

The attached table labeled "Engine K-values" consists of data points required for customer's software.

ITEM 3. FREQUENCY (SPEED) AND VOLTAGE REGULATION

The attached figure labeled "Frequency (Speed) and Voltage Regulation" shows the regulation of this unit with the speed governor and voltage regulator adjusted for isochronous operation. Regulation was verified at each load point after all transients had decayed, as the load was varied from no load to full load to no load.

ITEM 4. OPERATING PARAMETERS

The attached figure labeled "Operating Parameters - Taurus Generator Set" provides "new condition" operating parameters for comparative purposes. Data was compiled from various load runs after engineering evaluation.

ITEM 5. VIBRATION DATA

The attached figures labeled "Machinery Vibration Signature" are the spectrum plots for each vibration probe recorded during the engine full load run.

ITEM 6. SUDDEN LOAD TESTS

The attached digitized trace shows the sudden load testing of this unit at 1500 KW on-load and 3300 KW off-load corrected to sea level and zero duct losses per Solar Engineering Specification ES2220.

Frequency (speed) deviation during load application did not exceed the specification limit of minus 5.0 percent from rated speed and recovery was within a plus or minus 0.50 percent band within 15.0 seconds. Frequency deviation during load rejection was within 7.0 percent and recovery was within a plus or minus 0.50 percent band within 10.0 seconds.

Voltage deviation during load application did not exceed specification limit of plus or minus 17.0 percent from rated voltage and recovery was within a plus or minus 5.0 percent band within 2.0 seconds for this high performance generator. Voltage deviation during load rejection was within plus or minus 22.0 percent and recovery was within a plus or minus 5.0 percent band within 2.0 seconds.

ITEM 7. DRY EMISSIONS

The attached figures labeled "Dry Emissions" document the results of emissions testing without water injection. The component concentration levels are corrected to 15% oxygen and ISO conditions per Solar ES9-97. The NOx and CO emissions limits are 25 ppm and 50 ppm, respectively.

ITEM 1. ACCEPTANCE TEST

Solar® Turbines *A Caterpillar Company*	CONTROL CONSOLE HARDWARE VERIFICATION	Page: 1 of 3	Date: 04/18/01
CUSTOMER:	**PROJECT: 2-70221**	**UNIT: 3 of 3**	

OPERATION	TITLE	PURPOSE OF OPERATION	STAMP
5	Console Wiring and Shortages (Can)	To ensure that the console components and wiring are in accordance with the legal wiring diagram Verify that any missing components are recorded in the test log and placed on order	734
7	Allen Bradley Module Switches and Jumper Settings	Verify that the switches and jumpers on the A/B modules and the backplane of the PLC rack are set in accordance with the electrical schematic Also, verify that all modules are correctly positioned in the rack	734
8	Horn/Hour Meter/Start Counter Disconnect	To disable the alarm horn, hour meter, and start counter during test	734
10	Connect External DC Power	To search for any "short" circuits between OVDC and frame, and 24VDC and frame before applying DC power to the control console Also, verify that each circuit breaker powers its respective circuit/bus only per electrical print	734
12	Prepare Programming Terminal and Load PLC Program	Connect the programming terminal (PC) to the control console PLC and load the project application software to the PLC	734
15	Load Display Program (TT2000)	Load the display software into the control console display terminal/computer Set switch and jumper setting for Z501 per schematic sheet 9 and make sure PLC communicate to Z501	316
16	Load Display Program (PV1000)	Load the display software into the control console Panel View 900	734
21	PLC LED's All Green	Verify no communication error exists between the PLC and the display	734
22	Clear All Malfunctions	To lock-up the backup relay system	734
24	Block Transfer Error - Controlnet	To verify the correct alarm and/or shutdown functionality associated with ControlNet communication errors for units with CAN or ACNR modules	734
49	Lamp Test	To verify the lamps on the turbine control panel are operational	734

*** ENSURE ALL STAMPS ARE LEGIBLE AND IN BLACK INK ***

Solar® Turbines *A Caterpillar Company*	CONTROL CONSOLE HARDWARE VERIFICATION	Page: 2 of 3	Date.04/18/01
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OPERATION	TITLE	PURPOSE OF OPERATION	STAMP
63	Alarm Horn	To verify the horn is sounded on any alarm or shutdown condition and silenced when the alarm/shutdown condition is cleared or when "horn silence" or reset is selected	734
75	24 Vdc Voltage Divider	To verify the accuracy of the 24 Vdc measurement resistor network with a calibrated meter	734
95	Backup System (IPG)	Verify the basic IPG backup system	734
115	T37 Keyboard Commands	To verify that the display terminal's two sealed-membrane keypads (the Function Keypad and the numeric Keypad) are functional	316
116	Printer/Logger	To verify that the printer and data logging functions are operable	316
117	Set Console Timers	To verify that all electrical timers are set per the legal drawing and torque painted	734
130	A/C Visual Inspection	To verify the correct selection of the A/C meters and their proper wiring	744
131	A/C Simulator Hookup	To provide a consistent and logical method for connecting the A/C simulator	744
132	A/C LSM Module Verification (Hardware)	To verify that the LSM is installed and functions properly	744
133	A/C Metering Accuracy	To verify the accuracy of the AC meters and the CRT displayed AC parameters	744
134	A/C Voltage Droop Verification	To verify initial setup of the voltage droop feature of the Basler voltage regulator	744

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Solar® Turbines A Caterpillar Company	CONTROL CONSOLE HARDWARE VERIFICATION	Page: 3 of 3	Date 04/18/01
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OPERATION	TITLE	PURPOSE OF OPERATION	STAMP
135	A/C KVAR/P F Control	To verify the Basler KVAR/PF controller is operating properly	744
136	A/C Motorized Voltage Adjust	To verify that the motorized potentiometer and associated control assembly function correctly	786
137	A/C Voltage Regulator	To verify the circuitry and operation of the voltage regulator	786
139	A/C Single Unit Auto Sync (Hot Bus)	To verify the unit will automatically synchronize with a live bus	786
140	A/C Single Unit Auto Sync (Dead Bus)	The purpose of this operation is to verify statically that the control console is tuned to automatically synchronize to a dead bus	TE 59
150	Clear Open Discrepancies	To verify all operations have been performed and the Automated Test Log (ATL) is reviewed	316
152	Legal Drawings Clear	To verify all changes shown on the legal electrical drawing have been performed and the legal drawing is signed by the test engineer	734
154	Console Complete and Authorized for Disconnect	To obtain authorization from test engineer to disconnect the turbine controls and verify all test equipment and accessories are disconnected	734
159	Load PLC Program	To ensure the latest revision of the controls software is downloaded to the PLC	734
165	Test Cell Acceptance (New Production)	To ensure the package test engineer has accepted the turbine controls by signing the test verification sheet	734

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UNIVERSAL GENERATOR SET ACCEPTANCE TEST

CUSTOMER UNIT 3 PD 2-70221

MO 3100315 PKG S/N TG01587 ENG S/N 1060T

STATION 3 OPERATIONS				
OPER NO	OPERATION	REV DATE	DESCRIPTION	STAMP
SKID TEST OPERATIONS				
2000	SAFETY INSTRUCTIONS AND FAMILIARIZATION	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE OPERATOR IS FULLY AWARE OF THE PROJECT REQUIREMENTS AND GENERAL SAFETY PRECAUTIONS TO BE FOLLOWED WHEN OPERATING TURBO MACHINERY IN SUPPORT OF PRODUCTION TEST OPERATIONS	799
2002	SKID INSPECTION	8/98	THE PURPOSE OF THIS OPERATION IS TO PERFORM A PRELIMINARY INSPECTION OF THE SKID FOR PROPER ASSEMBLY AND COMPLETENESS	728
2005	SHORTAGES	9/99	THE PURPOSE OF THIS OPERATION IS TO ENSURE THAT ALL SHORTAGES ARE RECOGNIZED AND DOCUMENTED	799
2020 (AC)	LUBE OIL TANK AND CIRCULATION HEATER CHECK	6/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE PART NUMBER AND INTEGRITY OF THE LUBE OIL TANK AND CIRCULATION HEATERS, AS APPLICABLE	781
2025 (AC)	AC MOTOR SPACE HEATERS	4/00	THE PURPOSE OF THIS OPERATION IS TO MEASURE THE DC RESISTANCE AND VERIFY CONTINUITY OF EACH PACKAGE MOTOR SPACE HEATER	726
2030 (AC)	GENERATOR SPACE HEATER	5/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE INTEGRITY OF THE GENERATOR SPACE HEATERS	726
2035 (AC)	GENERATOR WINDING INSULATION RESISTANCE	5/00	THE PURPOSE OF THIS OPERATION IS TO MEASURE THE INSULATION RESISTANCE OF THE GENERATOR WINDINGS	750
2040 (AC)	GENERATOR EXCITER FIELD DC RESISTANCE	5/00	THE PURPOSE OF THIS OPERATION IS TO MEASURE THE DC RESISTANCE OF THE GENERATOR'S EXCITER FIELD	726
2045	VIBRATION SYSTEM INSTALLATION VERIFICATION	3/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE PROPER INSTALLATION OF THE VIBRATION SYSTEM COMPONENTS	[illegible]
2050	PRELIMINARY FACILITY ATTACHMENTS	12/98	THE PURPOSE OF THIS OPERATION IS TO PREPARE VARIOUS PACKAGE SYSTEMS AND CONNECTIONS FOR HOOKUP IN THE TEST CELL	799
2055	INSTRUMENTATION HOOKUP I	4/99	THE PURPOSE OF THIS OPERATION IS TO PROVIDE GUIDELINES FOR THE HOOKUPS AND INSTALLATION OF FACILITY HARNESSES AND TEST EQUIPMENT	728
2060	CIRCUIT TO GROUND RESISTANCE CHECK	10/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THERE IS A MINIMUM RESISTANCE BETWEEN ANY CIRCUIT AND SKID GROUND	728
2085	PACKAGE ELECTRICAL END DEVICES	7/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE ACCURACY OF THE PACKAGE MOUNTED END DEVICES THROUGH THE ELECTRICAL INTERCONNECT	809
2090	SKID INTERCONNECT AND SKID DC POWER HOOKUP	6/00	THE PURPOSE OF THIS OPERATION IS TO ENSURE THAT THE CORRECT INTERCONNECTS AND DC POWER HOOKUPS ARE HOOKED UP PER THE "LEGAL" WIRING DIAGRAM	728
CONSOLE/CONTROL SYSTEMS TEST OPERATIONS				
2100	OUTPUT MODULE WIRING VERIFICATION	5/00	THE PURPOSE OF THIS OPERATION IS TO ENSURE THAT NONE OF THE OUTPUT CIRCUITS FROM THE PLC ARE SHORTED TO "0V" OR GROUND	728
2130	CONSOLE/SKID LOCKUP	7/97	THE PURPOSE OF THIS OPERATION IS TO PREPARE THE CONSOLE AND SKID FOR TESTING	726

UNIVERSAL GENERATOR SET ACCEPTANCE TEST

CUSTOMER		UNIT	3	PD	2-70221
MO	3100315	PKG S/N	TG01587	ENG S/N	1060T

STATION 3 OPERATIONS				
OPER NO	OPERATION	REV DATE	DESCRIPTION	STAMP
2135	OFF/LOCAL/REMOTE SWITCH (S101)	7/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT WHEN THE OFF/LOCAL/REMOTE SWITCH (S101) IS IN THE OFF MODE, THE UNIT DOES NOT RESPOND TO THE START SIGNAL AND LOCKOUT SHUTDOWN IS ANNUNCIATED.	728

UNIVERSAL GENERATOR SET ACCEPTANCE TEST

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STATION 4 OPERATIONS				
OPER. NO.	OPERATION	REV DATE	DESCRIPTION	STAMP
2300	SKID SUPPORT LOCATION	5/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE SKID SUPPORTS ARE UNDER THE CUSTOMERS BOLT-DOWN POINTS	799
2305	FACILITY INLET/EXHAUST ATTACHMENTS	4/00	THE PURPOSE OF THIS OPERATION IS TO PROVIDE INSTRUCTION TO ATTACH THE FACILITY INLET AND EXHAUST DUCTS TO THE PACKAGE	799
2315	PLC SOFTWARE REVISION PROCEDURE	4/97	THE PURPOSE OF THIS OPERATION IS TO OUTLINE THE PROCEDURE FOR INSTALLING NEW SOFTWARE REVISIONS TO THE PROGRAM LOGIC CONTROLLER (PLC)	728
2320	SOFTWARE LOADING	4/99	THE PURPOSE OF THIS OPERATION IS TO ENSURE THAT THE SOFTWARE IS LOADED PROPERLY	728
2325	FACILITY OIL FILTER INSTALLATION	3/00	THE PURPOSE OF THIS OPERATION IS TO PROVIDE GUIDELINES FOR THE INSTALLATION OF FACILITY EQUIPMENT FOR TEST MEASUREMENT AND PACKAGE OIL SYSTEM PROTECTION	
2330	LOW LUBE OIL LEVEL AL/SD AND LUBE TANK FILL	9/97	THE PURPOSE OF THIS OPERATION IS TO FILL THE LUBE OIL TANK, AND VERIFY THE LOW OIL LEVEL SWITCH FUNCTIONS PROPERLY	
2345	SKID FAST STOP	4/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE SKID FAST STOP PUSH-BUTTON SHUTS THE UNIT DOWN AND THE ASSOCIATED DISPLAY MESSAGES ARE DEPICTED ON THE DISPLAY MONITOR	728
2350	IGV CALIBRATION (SOLONOX)	4/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE IGV'S ARE CALIBRATED CORRECTLY IF THE IGV'S ARE SUSPECTED TO BE INCORRECTLY CALIBRATED DEPT 377 (ENGINE BUILD) SHOULD BE REQUESTED TO RECALIBRATE THE IGV'S	728
2355	GEARBOX/ENGINE INSTALLATION	7/95	THE PURPOSE OF THIS OPERATION IS TO INSTALL ENGINE AND/OR GEARBOX ON THE SKID CORRECTLY EFFICIENTLY, AND SAFELY	700
2360 (AC)	GENERATOR LOAD CABLE HOOKUP	6/00	THE PURPOSE OF THIS OPERATION IS TO SAFELY ATTACH THE GENERATOR LOAD CABLES TO THE FACILITY LOAD TESTING NETWORK	750
2365 (AC)	FACILITY LOAD TESTING SETUP	5/00	THE PURPOSE OF THIS OPERATION IS TO SETUP THE FACILITY LOAD TESTING CIRCUIT BREAKER OVERCURRENT TRIP RELAYS AND PREPARE THE FACILITY LOAD BANKS FOR TESTING	726
2370	FACILITY HOOKUP (TESTCELL)	12/98	THE PURPOSE OF THIS OPERATION IS TO CONNECT VARIOUS PACKAGE SYSTEMS TO TEST CELL FACILITIES	725
2375	FACILITY COMPUTER LOADING	3/00	THE PURPOSE OF THIS OPERATION IS TO LOAD THE SALES ORDER SPECIFIC TEST DEFINITION PROGRAM INTO THE FACILITY COMPUTER SYSTEM	728
2385	INSTRUMENTATION HOOKUP II	6/95	THE PURPOSE OF THIS OPERATION IS TO ENSURE THAT INSTRUMENTATION HOOKUPS ARE PERFORMED SAFELY AND PROPERLY	728
2390 (AC)	GENERATOR FACILITY INTERCONNECTS	6/00	THE PURPOSE OF THIS OPERATION IS TO COMPLETE THE GENERATOR FACILITY AC HARNESS CONNECTIONS	726
2395	FACILITY VIBRATION MONITOR VERIFICATION	3/00	THE PURPOSE OF THIS OPERATION IS TO CONNECT THE FACILITY VIBRATION MONITOR SYSTEM AND SET THE APPROPRIATE ALARM AND SHUTDOWN SETPOINTS	725
2400	ZERO INSTRUMENTATION CHECK	2/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT ALL INSTRUMENTATION READINGS MEET THE FACILITY COMPUTERS ZERO CHECK CONDITIONS	728

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STATION 4 OPERATIONS				
OPER. NO.	OPERATION	REV DATE	DESCRIPTION	STAMP
2410 (AC)	AC MOTOR CONNECTION	8/98	THE PURPOSE OF THIS OPERATION IS TO PROVIDE A SAFE PROCEDURE FOR THE WIRING OF THE PACKAGE AC MOTOR CONNECTIONS	726
2415 (AC)	VFD CONFIGURATION	5/99	THE PURPOSE OF THIS OPERATION IS TO SAFELY SET UP AND CONFIGURE ALL PACKAGE VARIABLE FREQUENCY DRIVES (VFD S)	726
2420	PRELUBE PACKAGE	3/00	THE PURPOSE OF THIS OPERATION IS TO MAKE PRELIMINARY CHECKS AND ADJUSTMENTS TO LUBE OIL SYSTEM PRIOR TO FIRST CRANK	739
2430	AUX AND B/U LUBE OIL PUMP SHUTDOWNS	7/00	THE PURPOSE OF THIS OPERATION IS TO INSURE PROPER OPERATION OF THE AUXILIARY AND BACKUP LUBE PUMPS AND ASSOCIATED SOFTWARE LOGIC	739
2440	LIQUID FUEL SYSTEM LEAK TEST	6/99	THE PURPOSE OF THIS OPERATION IS TO LEAK TEST MOST OF THE LIQUID FUEL SYSTEM PRIOR TO STARTING THE UNIT IN LIQUID FUEL	728
2445	GAS FUEL SYSTEM LEAK TEST	6/99	THE PURPOSE OF THIS OPERATION IS TO CHECK THE GAS FUEL SYSTEM FOR LEAKS PRIOR TO CONNECTING THE NATURAL GAS TO THE SYSTEM DURING THIS TEST THE PILOT AIR SUPPLY PRESSURE AND TORCH PRESSURE WILL BE SET PER THE MECHANICAL LEGAL DRAWINGS	739
2450	PECC FUEL VALVE SETUP	4/97	THE PURPOSE OF THIS OPERATION IS TO STATICALLY VERIFY THE PROPER OPERATION OF THE PECC GAS FUEL CONTROL VALVE	728
2462	"AFI" AND "FORCE" SEARCH	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE PROGRAM AND CONSOLE ARE CHECKED FOR AFI'S FORCE'S AND TEST JUMPERS WHICH WERE INSTALLED OR OVERLOOKED DURING THE STATIC PORTION OF TESTING AND REMOVE THEM, IF POSSIBLE BEFORE CRANKING THE ENGINE	[illegible]
SPEC OP "A"	T60 ADRE DATA MONITORING	12/00	THE PURPOSE OF THIS OPERATION IS TO SETUP THE ADRE FOR VIBRATION MONITORING OF T60 SINGLE SHAFT ENGINES	739
2465	AIR INLET INSPECTION	9/98	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE AIR INLET DUCT IS CLEAN AND FREE OF FOREIGN OBJECTS AND DEBRIS	[illegible]
TEST ENGINEER OR TEAM LEADER'S INITIALS, UNIT READY TO CRANK				
2470	FIRST CRANK	4/00	THE PURPOSE OF THIS OPERATION IS TO CONDUCT THE UNIT S "FIRST CRANK"	[illegible]
2475	FIRST LIGHT OFF	4/00	THE PURPOSE OF THIS INSTRUCTION IS TO PROVIDE FOR AN ORDERLY AND DOCUMENTED PROCEDURE FOR PERFORMING "FIRST LIGHT-OFF"	739
2480	OVERSPEED	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE THREE SEPARATE OVERSPEED SHUTDOWNS PLC CONTROLLED INSTANTANEOUS AND DELAYED AND THE SEPARATE SKID MOUNTED BACK-UP OVERSPEED MONITOR	799
2485	NGP SPEED LOSS SHUTDOWN	3/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT UPON LOSS OF ONE SPEED PICKUP CONDUCTOR, THE UNIT WILL SHUTDOWN	739
2490	FUEL VALVE FAIL (GAS AND DUAL FUEL)	6/00	THE PURPOSE OF THIS OPERATION IS TO INSURE PROPER OPERATION OF BOTH THE PRIMARY AND SECONDARY FUEL VALVES	739
2495	OIL PRESSURE ALARM AND SHUTDOWN	6/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY PROPER ALARM AND SHUTDOWN RESPONSES TO LOW LUBE OIL PRESSURE CONDITION	739

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STATION 4 OPERATIONS				
OPER. NO.	OPERATION	REV DATE	DESCRIPTION	STAMP
2497	HIGH LUBE OIL HEADER TEMPERATURE ALARM AND SHUTDOWN	6/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE PROPER ALARM AND SHUTDOWN RESPONSES TO HIGH LUBE OIL HEADER TEMPERATURE CONDITIONS	739
2500	MANUAL COOLDOWN AND FAST STOP	6/00	THE PURPOSE OF THIS OPERATION IS TO PROVIDE FOR AN ORDERLY AND DOCUMENTED PROCEDURE FOR PERFORMING BOTH A MANUAL COOLDOWN AND FAST STOP	[illegible]
2530	T5 TEMPERATURE TOPPING, SETPOINT, AND CONTROLS	6/00	THE PURPOSE OF THIS OPERATION IS TO INSURE THAT THE FUEL SYSTEM FUNCTIONS PROPERLY IN ORDER TO RELIABLY START THE PACKAGE AND ALSO PREVENT A HIGH TEMP S/D	739
2545 (AC)	PMG VOLTAGE AND FREQUENCY CHECK	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT PRIOR TO VOLTAGE BUILD, THE GENERATOR'S PMG PRODUCES THE PROPER VOLTAGE AND FREQUENCY	726
2550 (AC)	VOLTAGE BUILD-UP	6/00	THE PURPOSE OF THIS OPERATION IS TO PERFORM THE INITIAL VOLTAGE BUILD	726
2560	BLEED VALVE SEQUENCE	3/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE BLEED VALVE OPENS AND CLOSES IN THE CORRECT SEQUENCE AND SPEED OR LOAD VALUES	[illegible]
2575	GEARBOX AND ENGINE BREAK-IN	2/01	THIS OPERATION DETAILS THE PROCEDURE FOR THE GEARBOX BREAK-IN RUNS AS SPECIFIED IN THE APPLICABLE ENGINE ACCEPTANCE SPECIFICATION	799
2580	ENGINE ACCEPTANCE	2/01	THIS OPERATION DETAILS THE PROCEDURE FOR THE ENGINE ACCEPTANCE RUN(S) AS SPECIFIED IN THE APPLICABLE ENGINE ACCEPTANCE SPECIFICATION	[illegible]
2585	EMISSIONS	2/01	THIS OPERATION DETAILS THE PROCEDURE FOR THE ENGINE EMISSIONS RUN(S) AS SPECIFIED IN THE APPLICABLE ENGINE ACCEPTANCE SPECIFICATION	[illegible]
2590	GENERATOR WINDING RTD VERIFICATION	6/00	THE PURPOSE OF THIS OPERATION IS TO MEASURE AND RECORD ALL GENERATOR WINDING RTD READINGS	[illegible]
2610	PRELIMINARY LEAK CHECK	6/00	THE PURPOSE OF THIS OPERATION IS TO IDENTIFY AND FIX AS MANY AIR OIL FUEL OR WATER LEAKS AS POSSIBLE BEFORE CONTINUED TESTING	[illegible]
2620	MOTOR ROTATION ARROW VERIFICATION	6/00	THE PURPOSE OF THIS INSTRUCTION IS TO ENSURE THAT THE MOTOR ROTATION ARROWS ARE CORRECTLY INSTALLED NEAR EACH MOTOR OR MOTOR/PUMP COMBINATION AND THEY ARE ACCURATE IN THEIR DEPICTION	799
2625 (AC)	VOLTAGE AND SPEED RANGE ADJUST	6/00	THE PURPOSE OF THIS OPERATION IS TO MANUALLY VERIFY PACKAGE VOLTAGE AND SPEED ADJUSTABILITY	[illegible]
2630 (AC)	SPEED DROOP	6/00	THE PURPOSE OF THIS OPERATION IS TO ADJUST AND VERIFY THE OPERATION OF THE SPEED DROOP FEATURE OF THE GENERATOR CONTROL SYSTEM	[illegible]
2635 (AC)	SPEED ISOCH TO SPEED DROOP BUMPLESS TRANSFER	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE SPEED ISOCH TO SPEED DROOP BUMPLESS TRANSFER FEATURE	[illegible]
2645 (AC)	VOLTAGE DROOP	6/00	THE PURPOSE THIS OPERATION IS TO VERIFY THE VOLTAGE DROOP FEATURE OF THE VOLTAGE REGULATOR	[illegible]
2655 (AC)	SPEED AND VOLTAGE REGULATION	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT SPEED AND VOLTAGE ARE PROPERLY REGULATED OVER A RANGE OF LOAD POINTS	819

UNIVERSAL GENERATOR SET ACCEPTANCE TEST

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MO 3100315 | PKG S/N TG01587 | ENG S/N 1060T

STATION 4 OPERATIONS				
OPER. NO.	OPERATION	REV DATE	DESCRIPTION	STAMP
2665 (AC)	SINGLE UNIT SYNCHRONIZATION	11/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE UNITS ABILITY TO SYNCHRONIZE VOLTAGE, FREQUENCY, AND PHASE ANGLE WITH A SIMULATED 3-PHASE BUS AND CLOSE THE OUTPUT BREAKER WHEN AN AUTOSYNCH OR MANUAL SNYC COMMAND IS INITIATED	
2670	LOAD TRANSIENTS	12/00	THE PURPOSE OF THIS OPERATION IS TO DOCUMENT THE UNIT'S ABILITY TO RECOVER FROM AN EXTREME ON OR OFF LOAD CONDITION WITHIN SPECIFIED LIMITS	798
2680 (AC)	KW & EXPORT/IMPORT CONTROL	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE UNIT S KW CONTROL FEATURE AND IMPORT/EXPORT CONTROL (IF APPLICABLE)	819
2685 (AC)	KVAR/PF CONTROL (ISLAND MODE)	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE KVAR/PF CONTROL WILL CHANGE GENERATOR VOLTAGE AS THE KVAR/PF SETPOINT IS VARIED	819
2695	F13/T4 PRELIMINARY SETPOINTS	6/00	THE PURPOSE OF THIS OPERATION IS TO DOCUMENT PRELIMINARY F13 AND T4 VALUES AT THE END OF SUDDEN LOADS IF SINGLE FUEL ONLY, AND AT THE END OF FUEL CHANGEOVERS IF THE UNIT IS DUAL FUEL	799
2700	START RELIABILITY AND ACCELERATION	4/97	THE PURPOSE OF THIS OPERATION IS TO DEMONSTRATE AND VERIFY THE CAPABILITY OF THE UNIT IN STARTING RELIABLY AND SUCCESSFULLY FOR FOUR CONSECUTIVE TIMES	739
2705	CUSTOMER OBSERVE OPERATIONS	6/00	THE PURPOSE OF THIS OPERATION IS TO DEMONSTRATE FOR THE CUSTOMER ALL REQUIRED OPERATIONS PER THE PACKAGE APPLICATION CHECK SHEET (ACS) AND THE INSPECTION AND TEST PLAN (ITP)	N TE 75 A
2740	TEST CRANK	4/97	THE PURPOSE OF THIS OPERATION IS TO INSURE PROPER OPERATION OF THE TEST CRANK FUNCTION FOR UNITS WITHOUT THE ON-CRANK WATER WASH OPTION	739
2745	WATER WASH (ON-CRANK AND ON-LINE)	6/00	THE PURPOSE OF THIS OPERATION IS TO PROVIDE FOR A DOCUMENTED AND ORDERLY PROCEDURE FOR TESTING THE PACKAGE WATER WASH SYSTEM(S)	
2750	DATA TABULATION	3/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT ALL OFFICIAL DATA REQUIRED FOR A PARTICULAR PROJECT HAS BEEN TAKEN AND THOROUGHLY CHECKED BY TECHNICIAN, LEAD PERSON AND TE AND CLEARLY DOCUMENTED IN THE PTI	759
TEST ENGINEER'S INITIALS, UNIT OK TO DEPREP				VES 9/16 0915 TE 13
2765	VIBRATION AND TEMP SUPPLEMENTARY DATA	4/97	THE PURPOSE OF THIS OPERATION IS TO PERFORM A VISUAL CHECK OF THE CONSOLE'S DATA DISPLAYS WHILE RUNNING	432
2770	FINAL LEAK CHECK I - PREP AND INITIAL VISUAL	4/97	THE PURPOSE OF THIS OPERATION IS TO PREPARE UNIT FOR FINAL LEAK CHECK	432
2775	FINAL LEAK CHECK II - FUEL SYSTEM CHECK	4/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THERE ARE NO FUEL LEAKS PRESENT ON THE UNIT PRIOR TO PACKAGE PULL	432
2780	FINAL LEAK CHECK III - AIR SYSTEM CHECK	4/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THERE ARE NO AIR LEAKS ON THE UNIT PRIOR TO PACKAGE PULL	432
2785	FINAL LEAK CHECK IV - OIL SYSTEM CHECK	4/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THERE ARE NO OIL LEAKS ON THE UNIT IN IT'S FIELD CONFIGURATION PRIOR TO PACKAGE PULL	75C

UNIVERSAL GENERATOR SET ACCEPTANCE TEST

CUSTOMER UNIT 3 PD 2-70221

MO 3100315 PKG S/N TG01587 ENG S/N 1060T

STATION 4 OPERATIONS				
OPER. NO.	OPERATION	REV DATE	DESCRIPTION	STAMP
2790	FINAL LEAK CHECK V - CONCLUSION	4/97	THE PURPOSE OF THIS OPERATION IS TO CONCLUDE THE FINAL LEAK CHECK OPERATIONS AND ENSURE THAT THERE ARE NO FLUID LEAKS ON THE UNIT PRIOR TO PACKAGE PULL	730
2800	AS-TEST PROGRAM SAVE AND PROGRAM CONSTANTS	4/99	THE PURPOSE OF THIS OPERATION IS TO SAVE A COPY OF THE "AS-TESTED" SOFTWARE TO THE "S" DRIVE AND PRINT THE PROGRAM CONSTANTS	730
2805	TEST COMPLETE - READY TO PRESERVE	1/99	THE PURPOSE OF THIS OPERATION IS TO TO VERIFY ALL GREEN CHANGES TEST OPERATIONS AND DISCREPANCIES HAVE BEEN STAMPED OFF OR ADDRESSED AND THAT THE PACKAGE TEST IS COMPLETE TO WHERE THE ENGINE AND FUEL SYSTEM CAN BE PRESERVED	
TEST ENGINEER'S INITIALS, UNIT OK TO PRESERVE				
2820	ENGINE AND FUEL SYSTEM PRESERVATION	3/00	THE PURPOSE OF THIS OPERATION IS TO SAFELY AND PROPERLY PRESERVE THE PACKAGE FUEL SYSTEM(S) AND THE ENGINE UPON CONCLUSION OF DYNAMIC TEST	
2822 (AC)	CURRENT TRANSFORMER WIRING	6/00	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE WIRING FOR THE DIFFERENTIAL AND NEUTRAL CURRENT TRANSFORMER LEADS IS PER THE LEGAL ELECTRICAL SCHEMATIC AND WIRING DIAGRAM	782
2825 (AC)	GENERATOR AND AC FACILITY DISCONNECT	6/00	THE PURPOSE OF THIS OPERATION IS TO DISCONNECT THE GENERATOR PACKAGE LOAD CABLES AND GENERATOR INSTRUMENTATION	782
2835	PACKAGE DE-PREP	1/99	THE PURPOSE OF THIS OPERATION IS TO PREPARE THE PACKAGE FOR REMOVAL FROM THE TEST CELL	
2837	CONSOLE (CONTROL SYSTEM) DE-PREP	12/99	THE PURPOSE OF THIS OPERATION IS TO REMOVE ALL FACILITY TEST EQUIPMENT RESET ALL PACKAGE TIMERS AND PREPARE THE OFF SKID CONSOLE FOR REMOVAL FROM TEST	9
2840	POST-TEST AUDIT	4/97	THE PURPOSE OF THIS OPERATION IS TO ENSURE THAT A POST-TEST AUDIT IS PERFORMED ON THE UNIT BEFORE PACKAGE PULL	9
2845	TEST VERIFICATION	12/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT ALL ITEMS IN THE TEST PAPERWORK ARE SIGNED OR STAMPED OFF AS COMPLETE THAT UNRESOLVED PACKAGE TEST DISCREPANCIES ARE DOCUMENTED ON THE TEST VERIFICATION SHEET, AND THAT ALL DISCREPANCIES HAVE BEEN CLEARED FROM THE TEST LOG	
2846	PACKAGE REMOVAL	3/00	THE PURPOSE OF THIS OPERATION IS TO REMOVE THE PACKAGE FROM THE TEST CELL	
2850	PAPERWORK COMPLETE	2/99	THE PURPOSE OF THIS OPERATION IS TO RETURN THE COMPLETED PACKAGE PAPERWORK TO THE APPROPRIATE LOCATIONS	

UNIVERSAL GENERATOR SET ACCEPTANCE TEST

CUSTOMER UNIT 3 PD 2-70221

MO 3100315 PKG S/N TG01587 ENG S/N 1060T

ENCLOSURE SYSTEMS TEST OPERATIONS - QUANTUM FIRE SYSTEM				
3140	SIMULATOR / TEST EQUIPMENT STAGING	8/97	THE PURPOSE OF THIS OPERATION IS TO ENSURE ALL OF THE REQUIRED TEST EQUIPMENT SIMULATORS EXPENDABLE SUPPLIES AND SALES ORDER "LEGAL" DRAWINGS ARE LOCATED AND AVAILABLE FOR ENCLOSURE AND ANCILLARY TESTING	809
3500	GAS SENSORS	8/97	THE PURPOSE OF THIS INSTRUCTION IS TO VERIFY PROPER OPERATION OF THE GAS SENSOR USED ON THE ENCLOSURE GAS DETECTION SYSTEM	809
3600 (AC)	AC ENCLOSURE LIGHTS	7/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE INSTALLATION AND THE OPERATION OF THE AC ENCLOSURE LIGHT SYSTEM	731
3740	FIRE SHUTTERS	8/97	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE FIRE SHUTTER WILL CLOSE ONLY AFTER THE FIRE SHUTTER SOLENOID IS ENERGIZED	N/A
3200	FIRE SYSTEM SETUP	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY PROPER FIRE SYSTEM WIRING AND TO INITIALLY "LOCK-UP" THE FIRE SYSTEM	809
3220	FIRE SYSTEM FAULTS	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE ABILITY OF THE FIRE & GAS SYSTEM TO DETECT AND ANNUNCIATE MODULE FAULTS AT THE MODULE, LCU AND PLC	809
3240	FIRE SYSTEM HORN TEST	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE FIRE SYSTEM HORN IS OPERATIONAL AND SOUNDS WHEN REQUIRED	809
3260	FIRE SYSTEM RELEASE STROBES TEST	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE FIRE SYSTEM RELEASE STROBES ARE OPERATIONAL AND THAT THEY OPERATE WHEN REQUIRED	809
3280	FIRE EYE TEST	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE ENCLOSURE MOUNTED FIRE EYES ARE WORKING AND WILL CAUSE A PACKAGE SHUTDOWN	809
3300	HEAT SENSOR TEST	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE ENCLOSURE MOUNTED THERMAL SWITCHES OPERATE PROPERLY AND WILL CAUSE A PACKAGE SHUTDOWN	809
3320	RELEASE CONFIRM SWITCH	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE PROPER OPERATION OF THE FIRE SYSTEM DISCHARGE PRESSURE SWITCH AND ITS ASSOCIATED PACKAGE INDICATIONS	809
3340	FIRE SYSTEM AUTO/INHIBIT TEST	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY THE OPERATION OF THE AUTO/INHIBIT SWITCH AND TO VERIFY THAT IN "INHIBIT" A DETECTED FIRE WILL NOT CAUSE RELEASE SOLENOIDS TO BE ENERGIZED	809
3360	MANUAL RELEASE SWITCH TEST	4/99	THE PURPOSE OF THIS OPERATION IS TO VERIFY (IN AUTO & INHIBIT) THAT THE MANUAL RELEASE SWITCH WILL ACTIVATE THE FIRE SYSTEM & RELEASE SOLONOIDS	809
3800	CUSTOMER OBSERVE - ENCLOSURE TEST	N/A	TO DEMONSTRATE TO A CUSTOMER REPRESENTATIVE THAT ALL ENCLOSURE SYSTEMS OPERATE AS INTENDED	N/A

ENCLOSURE AND FINAL VISUAL ACCEPTANCE TEST

CUSTOMER: _____ **PD #:** 2-70221 **UNIT #:** 3 OF 3 **PKG S/N:** TG01587

OPER. NO.	OPERATION	REV. DATE	DESCRIPTION	STAMP
9020	LEGAL DRAWING VERIFICATION	01/10/01	THE PURPOSE OF THIS OPERATION IS TO OBTAIN THE REQUIRED PROJECT LEGAL DRAWINGS AND VERIFY THEIR COMPLETENESS CONSOLE ELECTRICAL LEGAL (APPLICABLE TO ON-SKID CONTROLS ONLY) SKID ELECTRICAL LEGAL MECHANICAL LEGAL	809 809 809
9040	SKID GROUND CHECK (DRIVER SKID)	01/10/01	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT ON THE DRIVER SKID THERE IS A MINIMUM RESISTANCE BETWEEN ALL CIRCUITS AND SKID GROUND	809
9060	SKID GROUND CHECK (DRIVEN SKID)	01/10/01	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT ON THE DRIVEN SKID THERE IS A MINIMUM RESISTANCE BETWEEN ALL CIRCUITS AND SKID GROUND	N/A
9080	PRELIMINARY FINAL VISUAL - DRIVER SKID	01/10/01	THE PURPOSE OF THIS OPERATION IS TO PERFORM A PRELIMINARY FINAL VISUAL INSPECTION OF THE DRIVER SKID TO DETERMINE ALL WIRING IS PER THE LEGAL WIRING DIAGRAM	809
9100	PRELIMINARY FINAL VISUAL - DRIVEN SKID	01/10/01	THE PURPOSE OF THIS OPERATION IS TO PERFORM A PRELIMINARY FINAL VISUAL INSPECTION OF THE DRIVEN SKID TO DETERMINE ALL WIRING IS PER THE LEGAL WIRING DIAGRAM	N/A
9820	CLEAR PLC MEMORY (ON SKID CONTROLS ONLY)	01/10/01	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT THE PLC MEMORY IS WIPED CLEAR PRIOR TO SHIPMENT	809
9840	DISCREPANCY VERIFICATION	01/10/01	THE PURPOSE OF THIS OPERATION IS TO VERIFY THAT ALL DISCREPANCIES HAVE BEEN CLEARED	809
9860	FINAL VISUAL COMPLETE	01/10/01	THE PURPOSE OF THIS OPERATION IS TO ENSURE THAT ALL GREEN CHANGES HAVE BEEN WORKED	809
9880	FINAL PAPERWORK	01/10/01	THE PURPOSE OF THIS OPERATION IS TO COPY AND DISTRIBUTE THE ENCLOSURE AND FINAL VISUAL STAMP OFF SHEET	809
9900	DISPATCH LEGAL DRAWINGS	01/10/01	THE PURPOSE OF THIS OPERATION IS TO INSURE THAT ALL THE LEGAL DRAWINGS ARE RETURNED TO THEIR PROPER LOCATION	809

ITEM 2. TURBINE ENGINE PERFORMANCE

TAURUS 60S, T7300 ONE-SHAFT ENGINE PERFORMANCE, NAT. GAS FUEL
ENGINE S/N 1060T
CELL - 11 TEST DEF= 99 9 DATA TAKEN: 15-JUN-01 11:00:36 P.F.= 1.00

IGV	-DEG. :	5.000	INLET GUIDE VANE ANGLE (OPERATOR SET)
P.BARO	-IN.HG :	29.456	PRESS., BAROMETRIC (T.BARO= 32. DEG.F)
%R.H.	-% :	63.000	PERCENT RELATIVE HUMIDITY
T.AMB	-DEG.F :	75.650	TEMP., OUTSIDE AMBIENT AIR
STD.TEMP	-DEG.F :	59.000	TEMP., STANDARD CONDITIONS (0= T0.AVG)
P.LOSS.A-	:	652.000	CODE: POWER LOSS COEFF'S, ACT. G/B & GEN
P.LOSS.C-	:	652.000	CODE: POWER LOSS COEFF'S, CUST.G/B & GEN
NTURB	-RPM :	15269.228	SHAFT SPEED, 1-SHAFT TURBINE ENGINE ROTOR
NT.100%	-RPM :	14951.000	100% SHAFT SPEED, 1-SHAFT TURBINE ENGINE R
GEN.KW	-KW :	5173.325	GENERATOR LOAD
DRY.WA	-PPS :	45.074	AIRFLOW, AIR INLET VENTURI, W/O HUMIDITY
P0.AVG	-IN.H2O:	-5.684	PRESS., AIR INLET TOTAL, AVG. OF PROBES
P0.PKG	-IN.H2O:	-7.188	PRESS., AIR INLET WALL STATIC, PKG. MUFF
P1AV.PKG	-IN.H2O:	-83.600	PRESS., ENG. COMPR. INLET STATIC, AVG.
PCD	-PSIG :	157.139	PRESS., COMPRESSOR DISCHARGE
P7.AVG	-IN.H2O:	-0.058	PRESS., EXHAUST WALL STATIC, AVG OF TAPS
T0.AVG	-DEG.F :	80.220	TEMP., AIR INLET, AVG. OF PROBES
T2.AVG	-DEG.F :	726.139	TEMP., COMPRESSOR DISCHARGE, AVG, PROBES
T5.AVG	-DEG.F :	1292.234	TEMP., 3RD STAGE TURB INLET, AVG, T/C'S
T7.AVG	-DEG.F :	974.839	TEMP., EXHAUST GAS, AVG. OF PROBES
FUELTYPE-	:	1.000	FUEL CODE: 1=NATURAL GAS, 3=LIQUID: DIES#2
WF.MASS	-PPH :	2832.335	FUEL MASSFLOW, METER #1
WF.MASS2	-PPH :	2837.115	FUEL MASSFLOW, METER #2
DWF.MASS	-% :	0.169	DELTA FUEL FLOW, METERS #1 & #2, (% OF AVG
LHV.NGAS	-BTU/LB:	20597.512	LOWER HEATING VALUE, NATURAL GAS FUEL
TNG.AVG	-DEG.F :	76.396	TEMP., NATURAL GAS FUEL, AVG. OF PROBES
H/C.GAS	- :	0.320	HYDROGEN/CARBON RATIO, NATURAL GAS
WA.BLEED	-PPS :	0.000	FLOW, AIR BLEED TO AMBIENT, SOLONOX
RUN.#	- :	4.000	TEST RUN NO./DATAPOINT (OPERATOR SET)

ADJUSTED INPUTS:
WF.AVG : 2834.725

RESULTS CORRECTED TO 59.0 DEG.F AIR TEMP,
SEA LEVEL, & NO DUCT LOSSES.

CORR PCT-SPEED, CORR.%NT	99.97	(99.70 - 100.30)	
CORR MAX TEMP FROM WORK, TRIT/TH(STD)	1890.3	(1875. - 1895.)	
CORR.KW	5245.8	(5043. - MIN)	
SFC, BTU/KW-HR	11098.	(11615. - MAX)	
CORR SHP	7446.4		
SFC, BTU/HP-HR	7819.		
COMPR PRESS RATIO, R(C)	12.144	(12.00 - MIN)	REF.ONLY
CORR COMPR MASS FLOW, WA(PPS)	47.31	(49.60 - MAX)	REF.ONLY
T5(R)/TRIT(R)	0.7159	(0.6518 - 0.7580)	
CORR PT INLET TEMP, T5/TH(STD)	1222.6		
CORR EGT, T7	910.4	(891. - MIN)	REF.ONLY
ACTUAL TEMP FROM WORK, TRIT	1979.9		
CORR.WF, LBS N.GAS/HR	2824.9		
CORR.WF, MILLION BTU/HR	58.221		
EFF. G/B, % (ASSUMED)	98.00		
EFF. GEN., % (ASSUMED)	96.40		
HEAT.BAL	0.9856		

ENGINE S/N K-values	1060T
PD #:	2-70221
PD NAME UNIT #	#3
MODEL #	T7301S
TEST ENGINEER	S. RUETER 6/25/01
F13:509 ENGSRLNUM	1060T
F13:281 or 645 or 646 BASET5_GAS	(See below)
F13:282 BASET5_LIQ	N/A
1-Shaft	
FUEL	GAS
% PILOT 2	2 3% half load 2 6 % full load
ORIFICE DIA (mm)	N/A
F13:687 VARPLT_Y1	26 0
F13:688 VARPLT_Y2	26 0
F13:370 SIVKWSPLO	93 0
F13:371 SIVKWSPHI	94 5
F13:645 T5SIVOPEN (Base T5 SIV's Open)	1226
F13:646 T5SIVCLOSED (Base T5 SIV's Closed)	1248
F13:xxx GV59TPZ_SP	N/A
F13:372 VGV59SP_G	1200
F13:384 T5T3_LO_LD	N/A
F13:385 T5T3_HI_LD	N/A
F13:389 PZCBAIR_RT	45730
F13:392 PRCNTLO_LD	N/A
F13:393 PRCNTHI_LD	N/A

ITEM 3. FREQUENCY (SPEED) AND VOLTAGE REGULATION

Frequency (SPEED) and Voltage Regulation

Customer	:	Unit No	:3	Turbine S/N:1060T	
Project	:2X70221	Model	:T7301S	Package S/N:TG01587	
Fuel Type	:GAS	Date	:12-JUN-01	Time	:20:33:55

		0 KW	1600 KW	3200 KW	FULL KW	0 KW
Generator AC Load:						
Power Measured (KW)	GEN.KW	12.	1572.	3217.	4776.	12.
Power no losses (KW)	CORR.KW	12.	1669.	3351.	4990.	11.
Power Factor	P.F.	0.00	1.00	1.00	1.00	0.00
Facility Inlet Duct:						
Average Temp.(DegF)	T0.AVG	63.19	62.95	62.92	63.16	62.74
Speed (Freq.) (%)	Min	100.00	100.00	100.00	100.00	100.00
Speed (Freq.) (%)	%NTURB	100.04	100.04	100.08	100.14	100.03
Speed (Freq.) (%)	Max	100.06	100.06	100.08	100.16	100.03
Generator Volt (%)	Min	100.02	99.98	100.03	100.01	100.01
Generator Volt (%)	%.VOLT	100.02	99.99	100.03	100.02	100.03
Generator Volt (%)	Max	100.03	100.03	100.04	100.02	100.04
Voltage Balance (2% Max)	VOLT.H-L	0.03	0.02	0.38	0.51	0.03
Freq Regulation (.25% Max)		0.00	-0.01	-0.04	-0.10	0.01
Volt Regulation(1.0% Max)		0.00	0.03	-0.01	0.01	0.00

ITEM 4. OPERATING PARAMETERS

TAURUS GENERATOR SET

CUSTOMER:
PROJECT : 70221

UNIT NO: 3
MODEL : T7301S

TURBINE S/N: 1060T
PACKAGE S/N: TG01587

PARAMETER	NAME	LIMIT	0 KW	1600 KW	3200 KW	DRY F/L
DATE			12-JUN-01	11-JUN-01	11-JUN-01	15-JUN-01
TIME			10:33:37	12:51:06	13:21:19	14:13:06
TEST CELL			11	11	11	11
FUEL			GAS	GAS	GAS	GAS
GENERATOR AC LOAD						
POWER-MEASURED (KW)	GEN.KW		4918.	1560.	3189.	4719.
POWER-NO LOSSES (KW)	CORR.KW		5123.	1618.	3217.	4915.
VOLTAGE (VOLTS)	VOLT.AVG		13249.8	13224.8	13231.0	13217.4
VOLTAGE BALANCE (%)	VOLT.H-L	2.0 MAX	0.4	0.0	0.3	0.5
CURRENT (AMPS)	AMP.AVG		215.	69.	140.	206.
POWER FACTOR	P.F.		1.00	0.99	1.00	1.00
FREQUENCY (HZ)	GEN.FREQ		60.0	60.9	60.9	60.0
GENERATOR WINDING TEMP (DEG.C)						
PHASE A	T.GEN.A		62.	40.	48.	63.
PHASE B	T.GEN.B		67.	43.	51.	66.
PHASE C	T.GEN.C		67.	43.	51.	66.
ENGINE SPEED (%)						
ENGINE SPEED	%NTURB		100.08	101.35	101.58	100.01
LUBRICATION						
OIL TEMPERATURE (DEG.F)	TPKG.OIL	140. - 155.	144.	141.	140.	142.
GEARBOX OIL PRESSURE (PSI)	PGB.OIL	45. - 65.	45.	45.	45.	46.
TURBINE LT OIL PRESSURE (PSI)	P.COMP.L	45. - 65.	58.	57.	57.	61.
OIL MANIFOLD PRESSURE (PSI)	P.OIL		74.	73.	73.	78.
GEARBOX OIL FLOW (GPM)	FGB.OIL	41.2 - 66.0	56.5	54.9	55.8	57.0
TURBINE LT OIL FLOW (GPM)	F.COMP.L		33.2	32.6	32.1	34.4
ENGINE TEMPERATURE (DEG.F)						
FAC AIR INLET DUCT	T0.AVG		66.2	72.6	74.5	77.8
THIRD STAGE TURBINE INLET	T5.AVG	1248. MAX	1226.	778.	1191.	1224.
THIRD STAGE TURBINE INLET 1	T5/1		1244.	765.	1195.	1214.
THIRD STAGE TURBINE INLET 2	T5/2		1206.	808.	1208.	1207.
THIRD STAGE TURBINE INLET 3	T5/3		1245.	760.	1239.	1275.
THRID STAGE TURBINE INLET 4	T5/4		1160.	755.	1151.	1178.
THIRD STAGE TURBINE INLET 5	T5/5		1180.	791.	1155.	1232.
THIRD STAGE TURBINE INLET 6	T5/6		1319.	787.	1198.	1239.
ENGINE EXHAUST DUCT	T7.AVG		922.6	560.1	953.5	931.6
THRUST BEARING TEMPERATURES (DEG.F)						
FWD. THRUST BRG.#1 RTD	TGP.TBRG	230. MAX	194.	188.	183.	189.
FWD. THRUST BRG.#2 RTD	TGPTBRG2	230. MAX	191.	183.	179.	186.
ENGINE PRESSURE						
COMPRESSOR DISCHARGE (PSI)	PCD		154.7	133.1	112.3	151.1
OIL TANK SUMP (IN.H2O)	PSUMP		0.8	0.6	0.4	0.8

TAURUS GENERATOR SET

CUSTOMER:
PROJECT : 70221

UNIT NO: 3
MODEL : T7301S

TURBINE S/N: 1060T
PACKAGE S/N: TG01587

PARAMETER		NAME	LIMIT	0 KW	1600 KW	3200 KW	DRY F/L
DATE				12-JUN-01	11-JUN-01	11-JUN-01	15-JUN-01
TIME				10:33:37	12:51:06	13:21:19	14:13:06
TEST CELL				11	11	11	11
FUEL				GAS	GAS	GAS	GAS
FUEL							
GAS FLOW	(CFM)	WF.NG		63.07	36.26	45.89	62.81
GAS TEMPERATURE	(DEG.F)	T.NG		63.9	74.5	73.9	76.0
GAS PRESSURE	(PSI)	P.NG		216.0	227.6	223.6	215.7
WATER FLOW	(GPM)	F.WATER		0.000	0.000	0.000	0.000
VIBRATION							
COMPRESSOR HORIZ VEL	(15-2000HZ)(IPS-RMS)	V.COMP.H	0.28 MAX	0.06	0.06	0.04	0.07
TURBINE VERT VEL	(15-2000HZ)(IPS-RMS)	V.TURB.V	0.40 MAX	0.07	0.07	0.06	0.07
GEARBOX HOR. VEL	(15-1000HZ)(IPS-RMS)	VGB.HOR	0.28 MAX	0.07	0.06	0.06	0.07
GEARBOX VERT ACCEL	(15-12000HZ)(G'S-RMS)	VGB.VERA	16.0 MAX	5.4	1.3	2.9	5.4
GEN DRIVEN END VERT	(15-90HZ) (IPS-RMS)	VGENDR.V	0.10 MAX	0.01	0.01	0.01	0.01
GEN EXCITER END VERT	(15-90HZ) (IPS-RMS)	VGENEXCV	0.10 MAX	0.02	0.01	0.01	0.01
BEARING 1 VERT	DISP(5-1000HZ) (MILS)	VBRG.1.V	3.50 MAX	1.05	1.76	1.15	1.08
BEARING 1 HORIZ	DISP(5-1000HZ) (MILS)	VBRG.1.H	3.50 MAX	1.02	1.77	1.11	1.00
BEARING 2 VERT	DISP(5-1000HZ) (MILS)	VBRG.2.V	3.50 MAX	0.32	0.34	0.22	0.40
BEARING 2 HORIZ	DISP(5-1000HZ) (MILS)	VBRG.2.H	3.50 MAX	0.46	0.47	0.32	0.59
BEARING 3 VERT	DISP(5-1000HZ) (MILS)	VBRG.3.V	3.50 MAX	0.61	0.69	0.46	0.56
BEARING 3 HORIZ	DISP(5-1000HZ) (MILS)	VBRG.3.H	3.50 MAX	0.64	0.79	0.47	0.55

ITEM 5. VIBRATION DATA

MACHINERY VIBRATION SIGNATURE

V.COMP.H
15-JUN-01
14:18:21
CELL: 11
2-70221 3
1060T

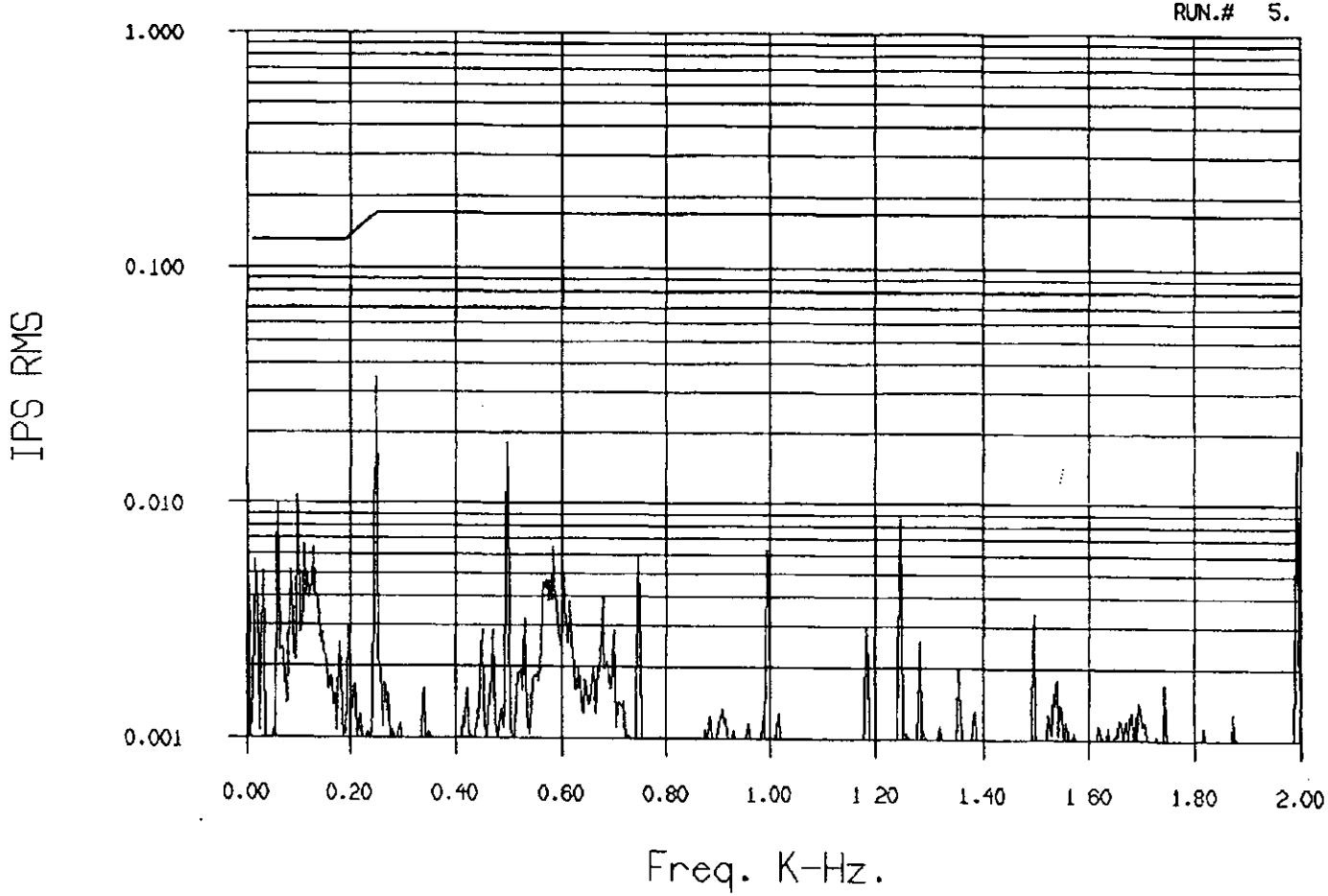
PEAKS (FREQ= AMPL):

59.9= 0.010	497.9= 0.018
98.7= 0.011	583.5= 0.006
110.5= 0.007	995.8= 0.006
126.5= 0.006	1244.7= 0.009
248.9= 0.035	1991.6= 0.017

1-E:
NTURB
248.9 Hz.
0.035

OIL TEMP:142. DEG.F
LOAD: 4735. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

V.TURB.V
15-JUN-01
14:18:21
CELL: 11
2-70221 3
1060T

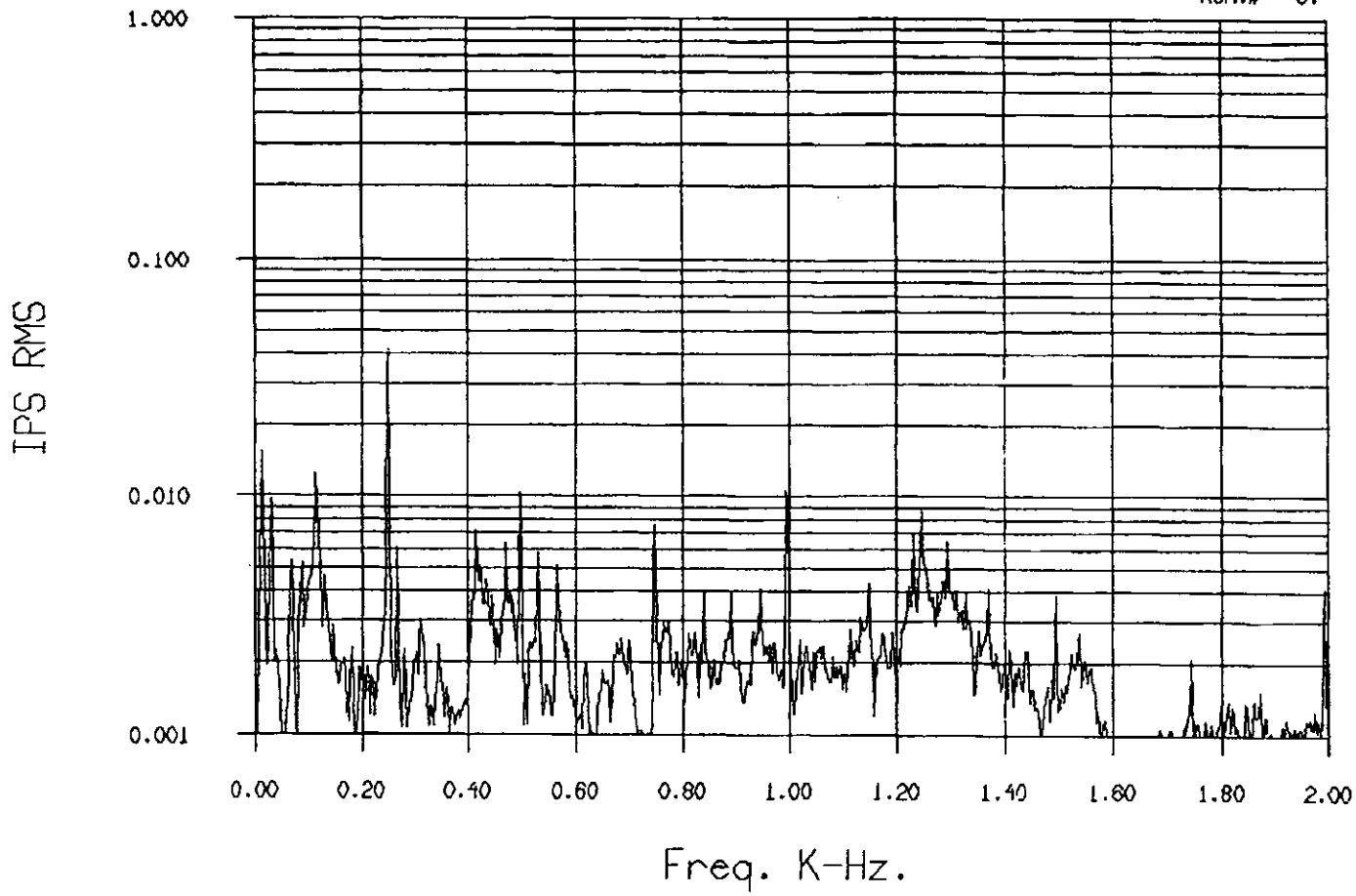
PEAKS (FREQ= AMPL):

12.1= 0.016	416.0= 0.007
30.0= 0.010	497.8= 0.010
113.7= 0.012	746.8= 0.008
118.9= 0.008	995.9= 0.011
249.0= 0.042	1243.8= 0.009

1-E:
NTURB
249.0 Hz.
0.042

OIL TEMP:142. DEG.F
LOAD: 4735. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VGB.HOR
15-JUN-01
14:17:54
CELL: 11
2-70221 3
1060T

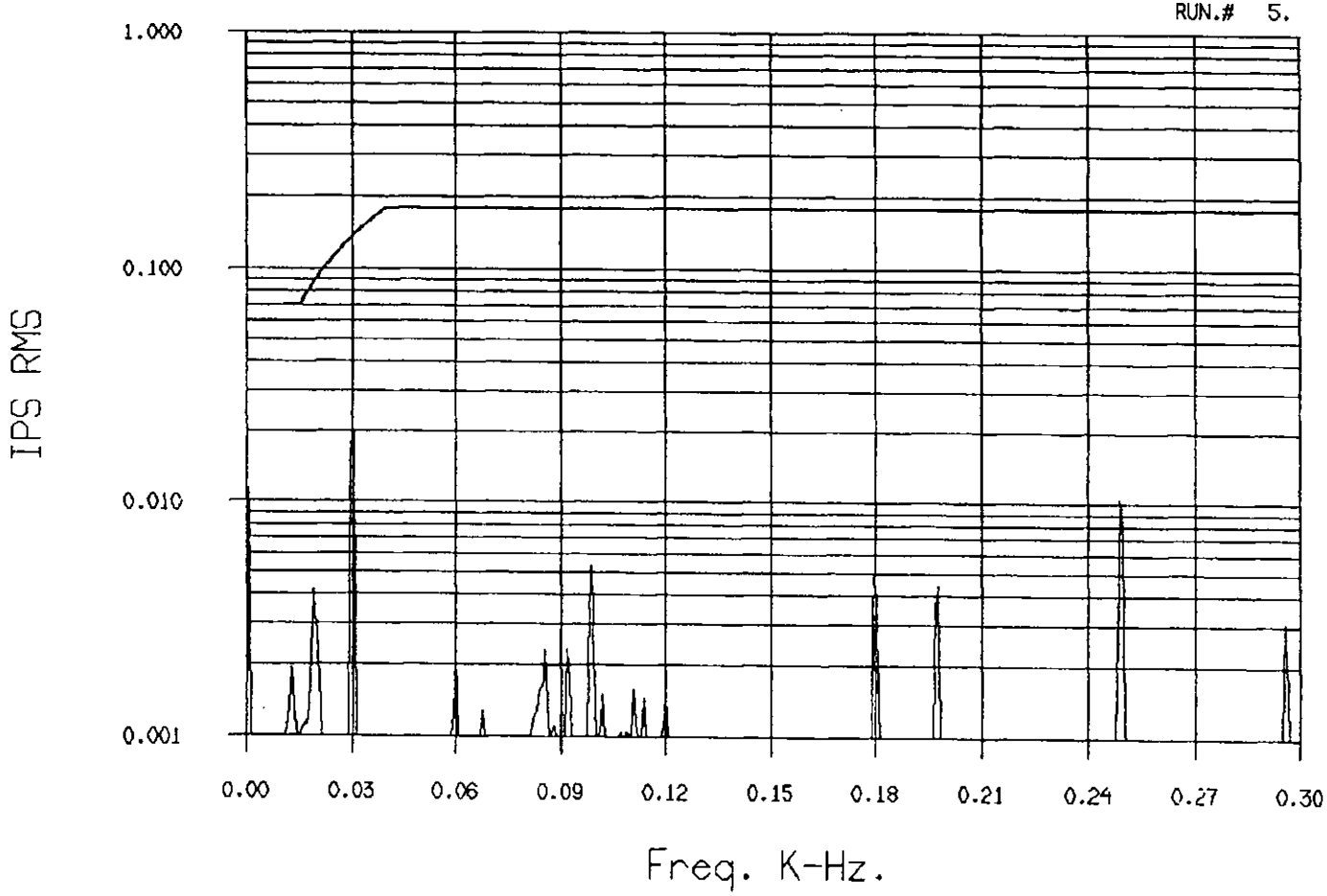
PEAKS (FREQ= AMPL):

19.0= 0.004	98.6= 0.005
30.0= 0.029	179.9= 0.005
59.9= 0.002	197.2= 0.004
85.3= 0.002	249.0= 0.011
92.1= 0.002	295.8= 0.003

1-E:
GEN
30.0 Hz.
0.029

OIL TEMP:142. DEG.F
LOAD: 4730. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VGB.HOR
15-JUN-01
14:17:21
CELL: 11
2-70221 3
1060T

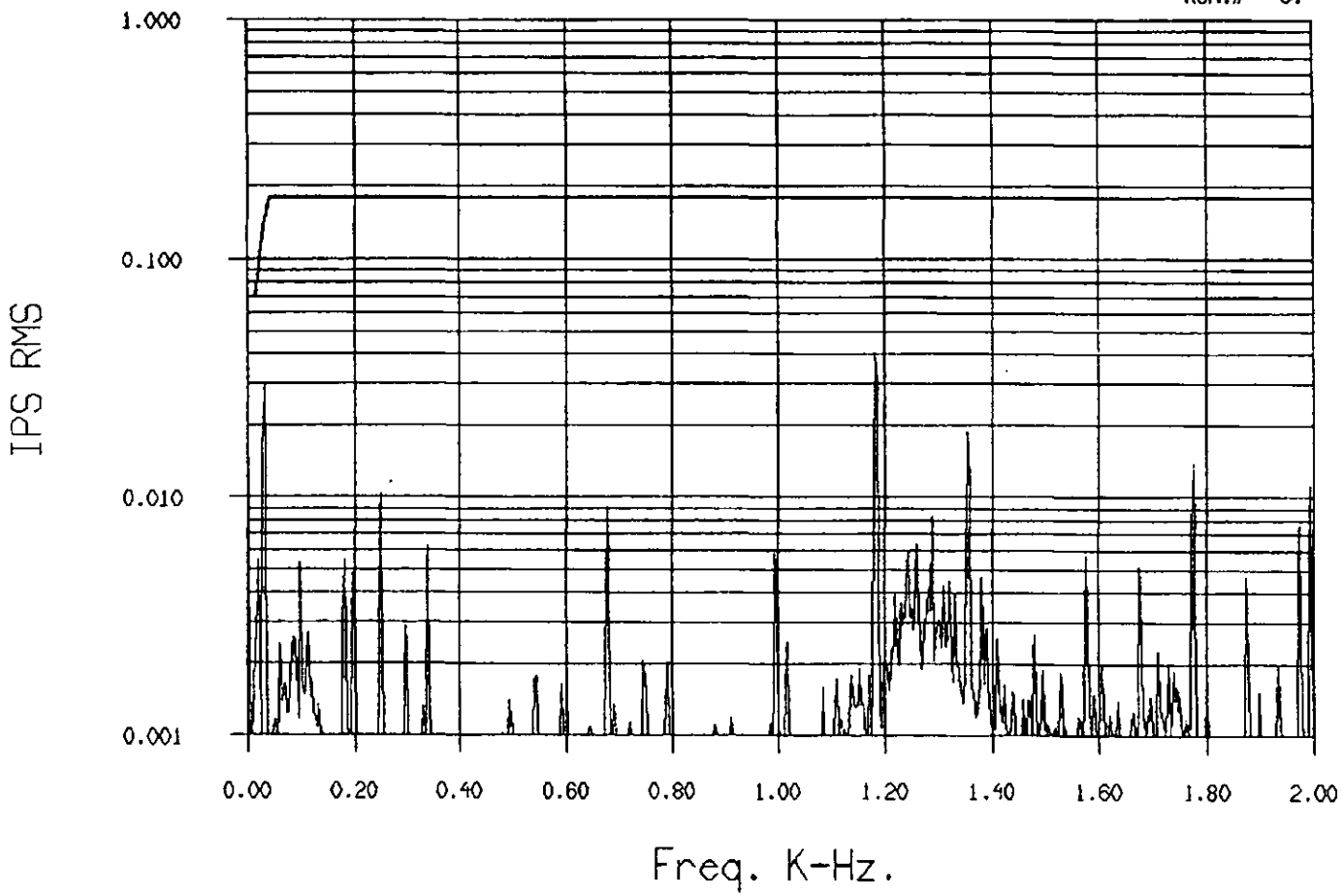
PEAKS (FREQ= AMPL):

30.0= 0.029	1288.4= 0.008
249.0= 0.010	1355.5= 0.019
677.7= 0.009	1774.9= 0.014
1183.3= 0.041	1972.2= 0.008
1258.9= 0.006	1991.8= 0.011

1-E:
NTURB
249.0 Hz.
0.010

OIL TEMP:142. DEG.F
LOAD: 4731. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VGB.VERA
15-JUN-01
14:16:54
CELL: 11
2-70221 3
1060T

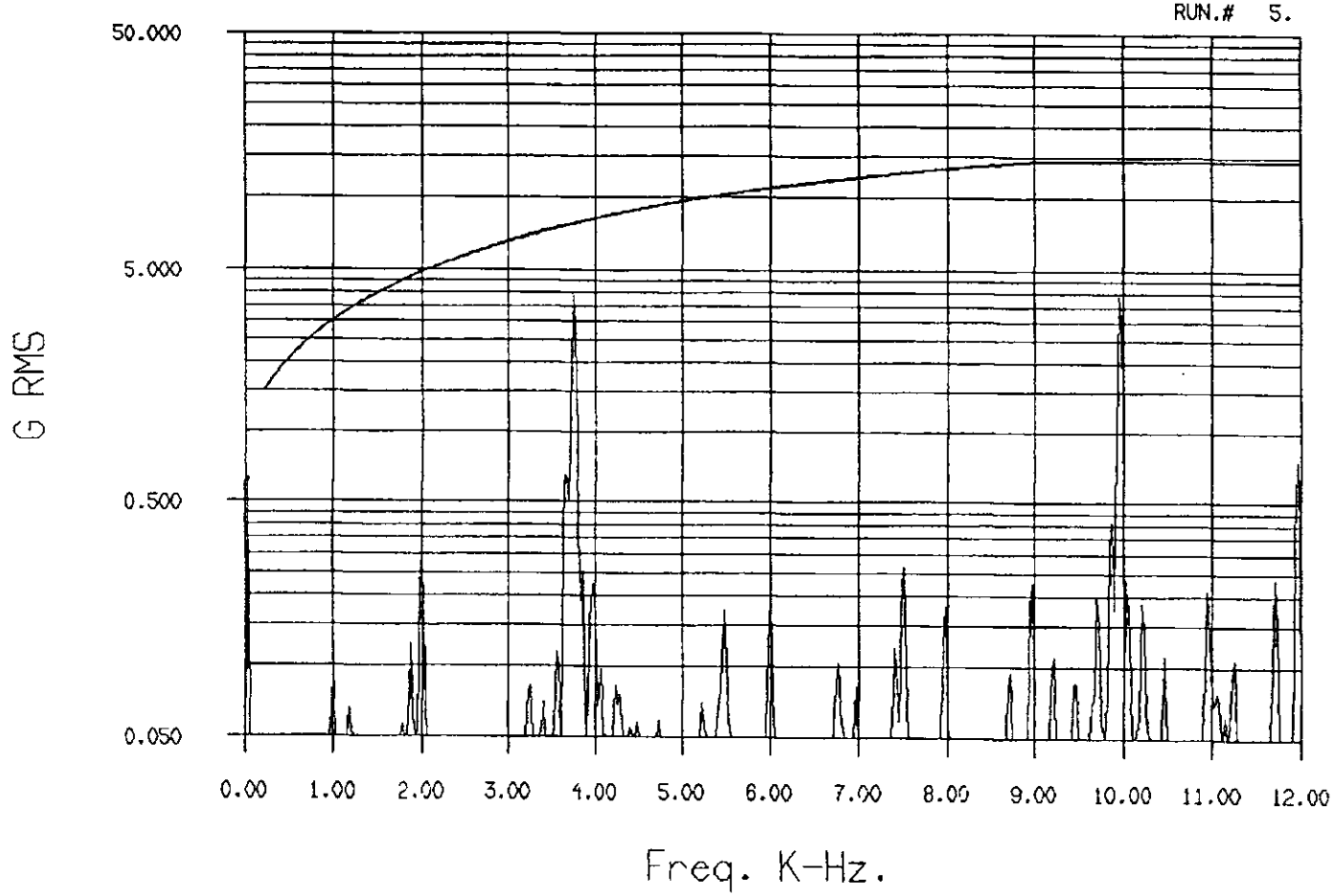
PEAKS (FREQ= AMPL):

1992.1= 0.302	9863.2= 0.414
3747.6= 3.847	9959.9= 3.912
3841.1= 0.254	10955.7= 0.211
7494.6= 0.265	11704.3= 0.238
8963.6= 0.228	11951.6= 0.760

1-E:
RGM
9959.9 Hz.
3.912

OIL TEMP:142. DEG.F
LOAD: 4726. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



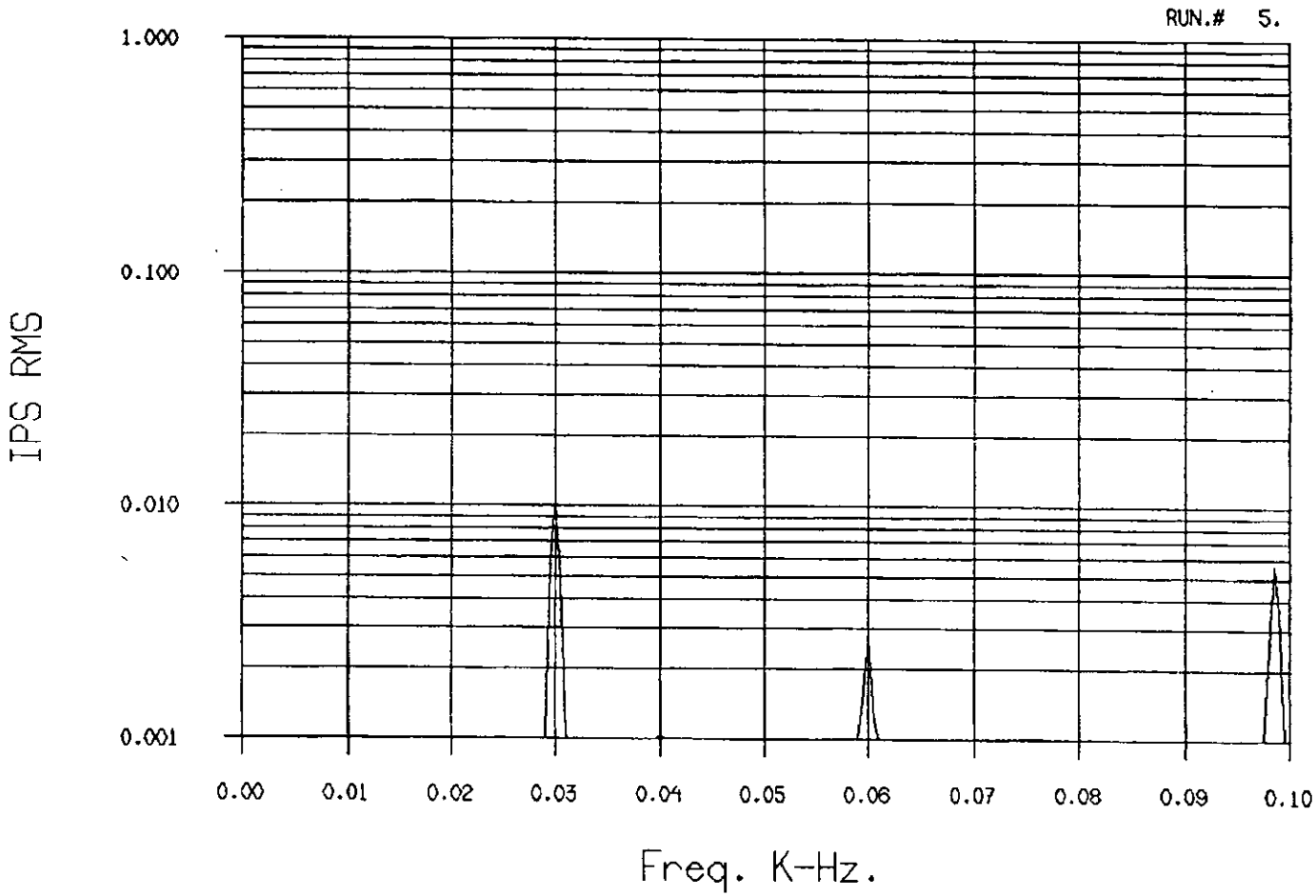
MACHINERY VIBRATION SIGNATURE

VGENDR.V
15-JUN-01
14:18:21
CELL: 11
2-70221 3
1060T

PEAKS (FREQ= AMPL):
30.0= 0.010
40.2= 0.001
59.9= 0.003
98.6= 0.006

1-E:
GEN
30.0 Hz.
0.010

OIL TEMP:142. DEG.F
LOAD: 4724. KW -UNCORRECTED
FUEL: NGAS



MACHINERY VIBRATION SIGNATURE

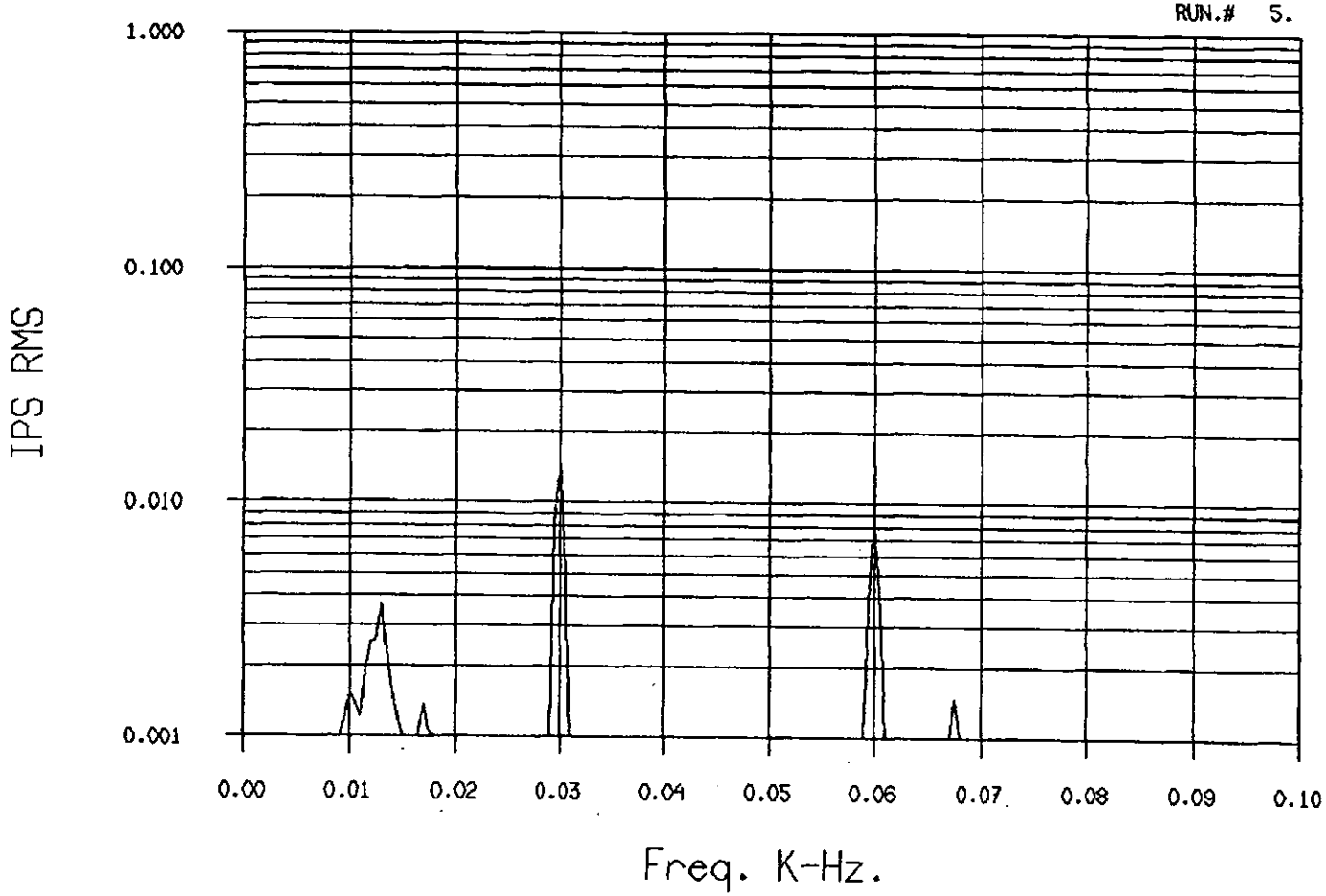
VGENEXCV
15-JUN-01
14:18:21
CELL: 11
2-70221 3
1060T

PEAKS (FREQ= AMPL):
12.8= 0.004
17.2= 0.001
30.0= 0.015
59.9= 0.008
67.4= 0.001

1-E:
GEN
30.0 Hz.
0.015

OIL TEMP:142. DEG.F
LOAD: 4724. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VBRG.L.V
15-JUN-01
14:18:55
CELL: 11
2-70221 3
1060T

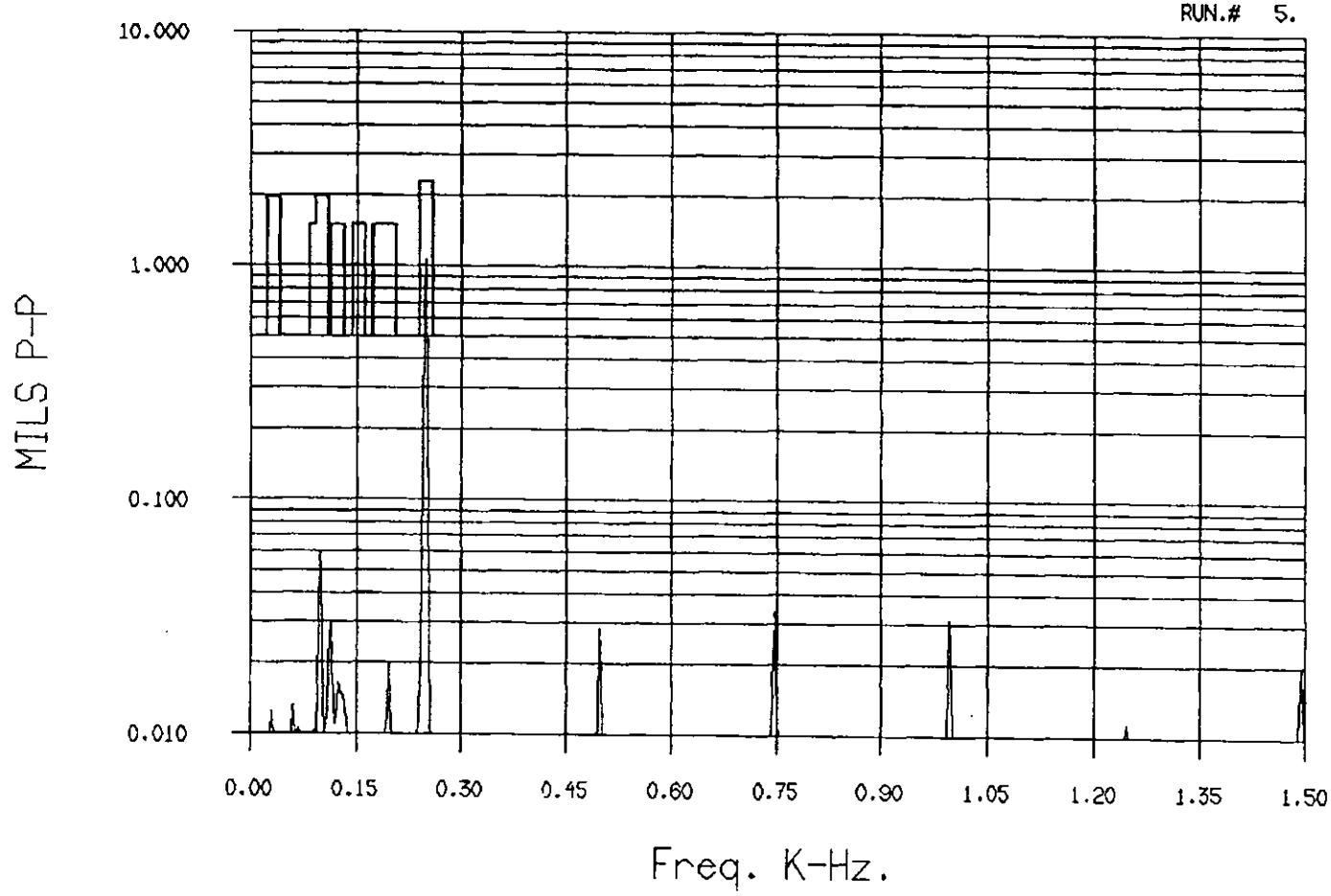
PEAKS (FREQ= AMPL):

29.8= 0.013	498.0= 0.028
98.6= 0.059	746.9= 0.034
111.5= 0.030	995.9= 0.032
197.1= 0.020	1244.8= 0.011
249.0= 1.052	1493.8= 0.020

1-E:
NTURB
249.0 Hz.
1.052

OIL TEMP:142. DEG.F
LOAD: 4718. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

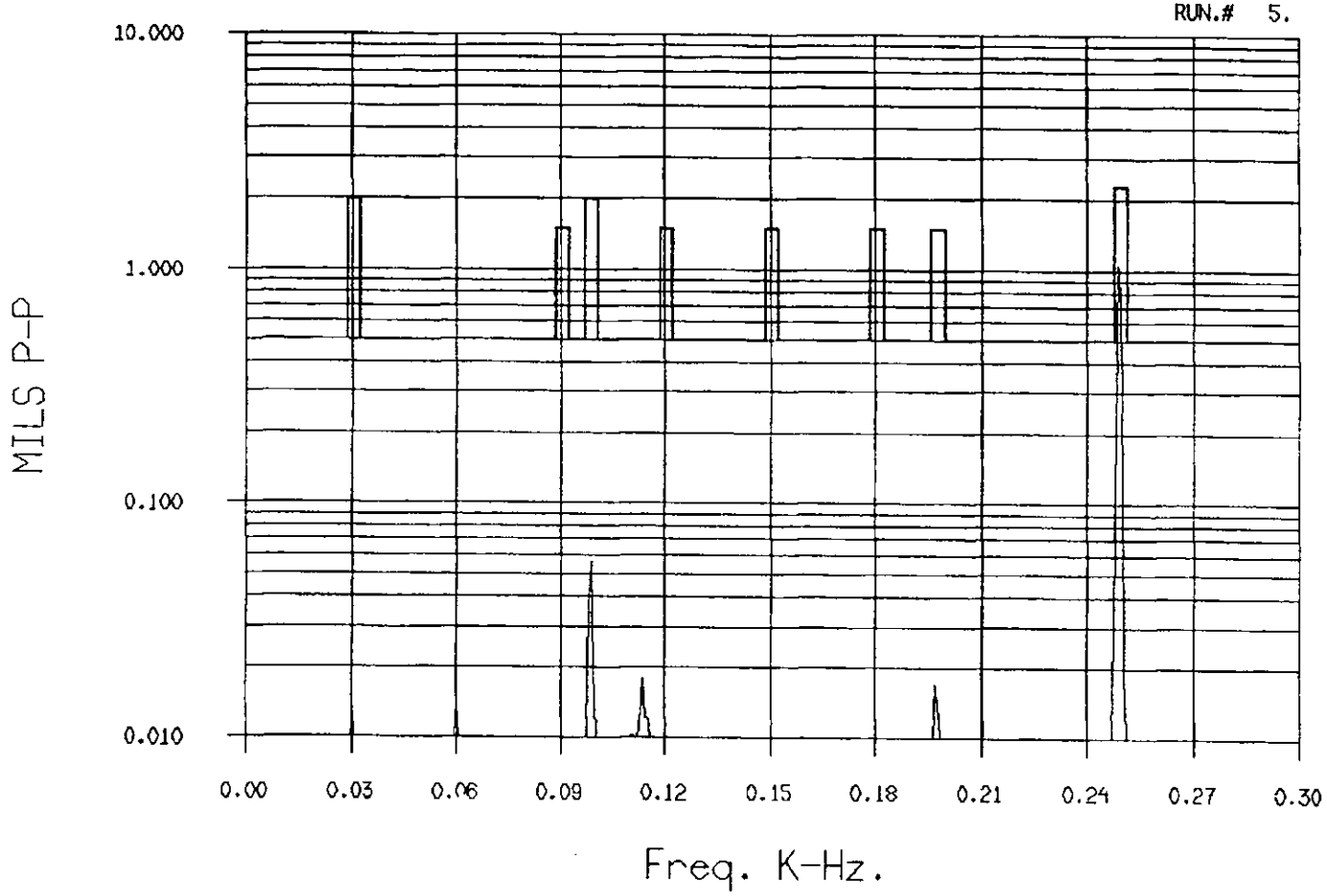
VBRG.1.V
15-JUN-01
14:19:51
CELL: 11
2-70221 3
1060T

PEAKS (FREQ= AMPL):
30.0= 0.013
60.0= 0.014
98.6= 0.057
113.5= 0.018
197.2= 0.017
249.0= 1.049

1-E:
GEN
30.0 Hz.
0.013

OIL TEMP:142. DEG.F
LOAD: 4717. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

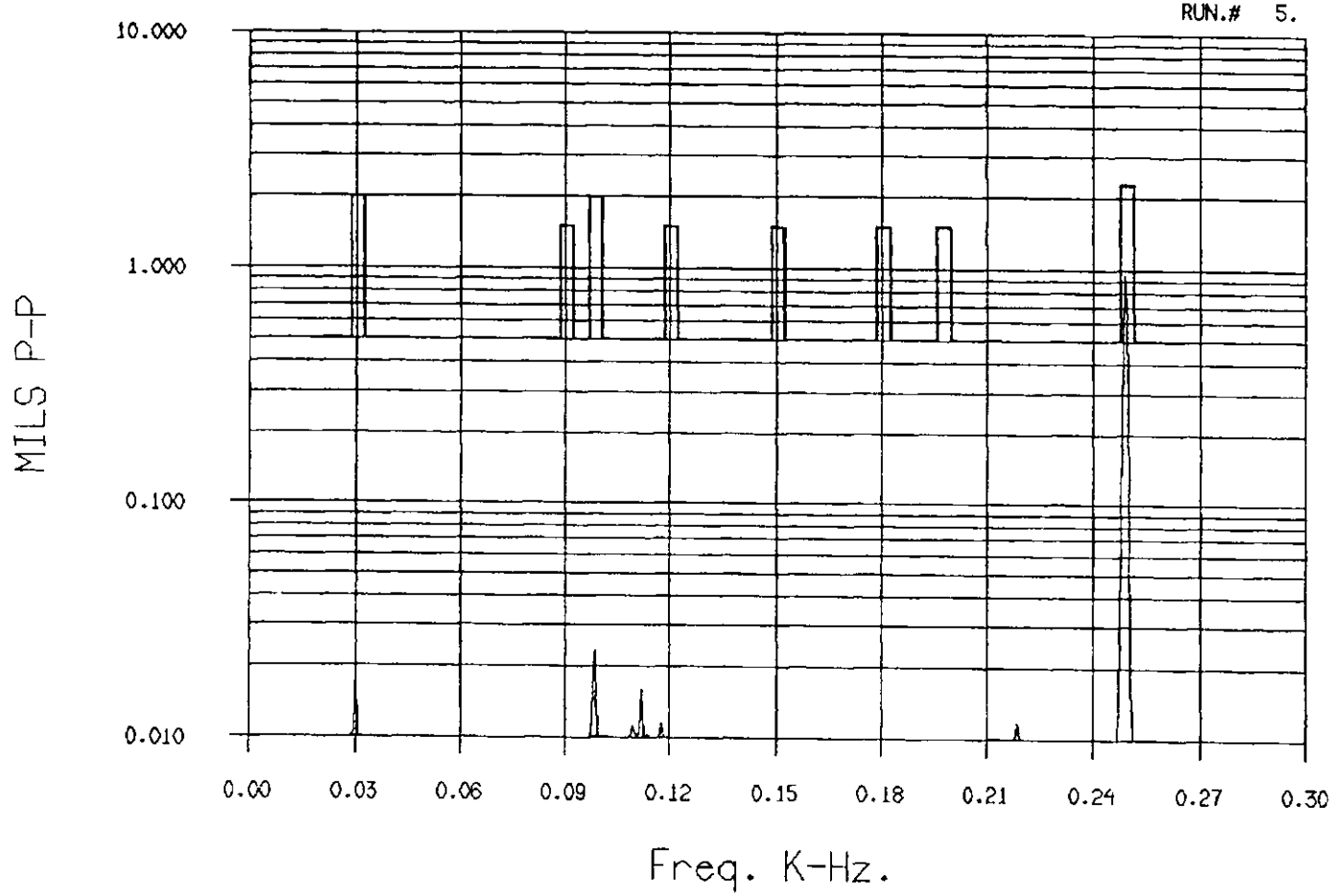
VBRG.1.H
15-JUN-01
14:19:51
CELL: 11
2-70221 3
1060T

PEAKS (FREQ= AMPL):
30.0= 0.020
98.6= 0.023
111.7= 0.016
219.0= 0.012
249.0= 0.948

1-E:
GEN
30.0 Hz.
0.020

OIL TEMP:142. DEG.F
LOAD: 4717. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VBRG.1.H
15-JUN-01
14:18:55
CELL: 11
2-70221 3
1060T

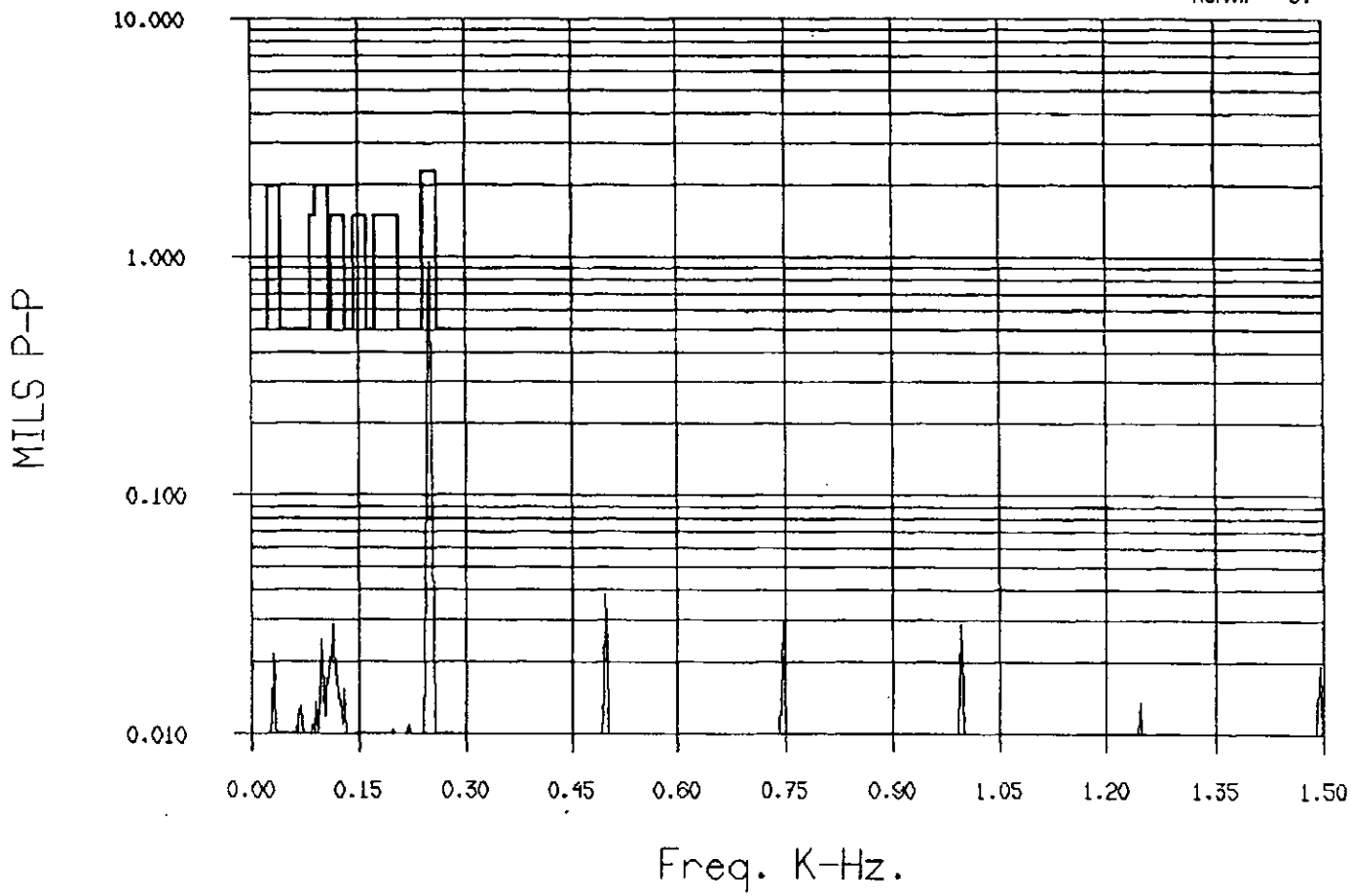
PEAKS (FREQ= AMPL):

29.9= 0.022	497.9= 0.038
98.7= 0.025	746.9= 0.030
113.9= 0.029	995.9= 0.029
129.0= 0.016	1244.8= 0.014
249.0= 0.952	1493.8= 0.019

1-E:
NTURB
249.0 Hz.
0.952

OIL TEMP:142. DEG.F
LOAD: 4718. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VBRG.2.V
15-JUN-01
14:14:09
CELL: 11
2-70221 3
1060T

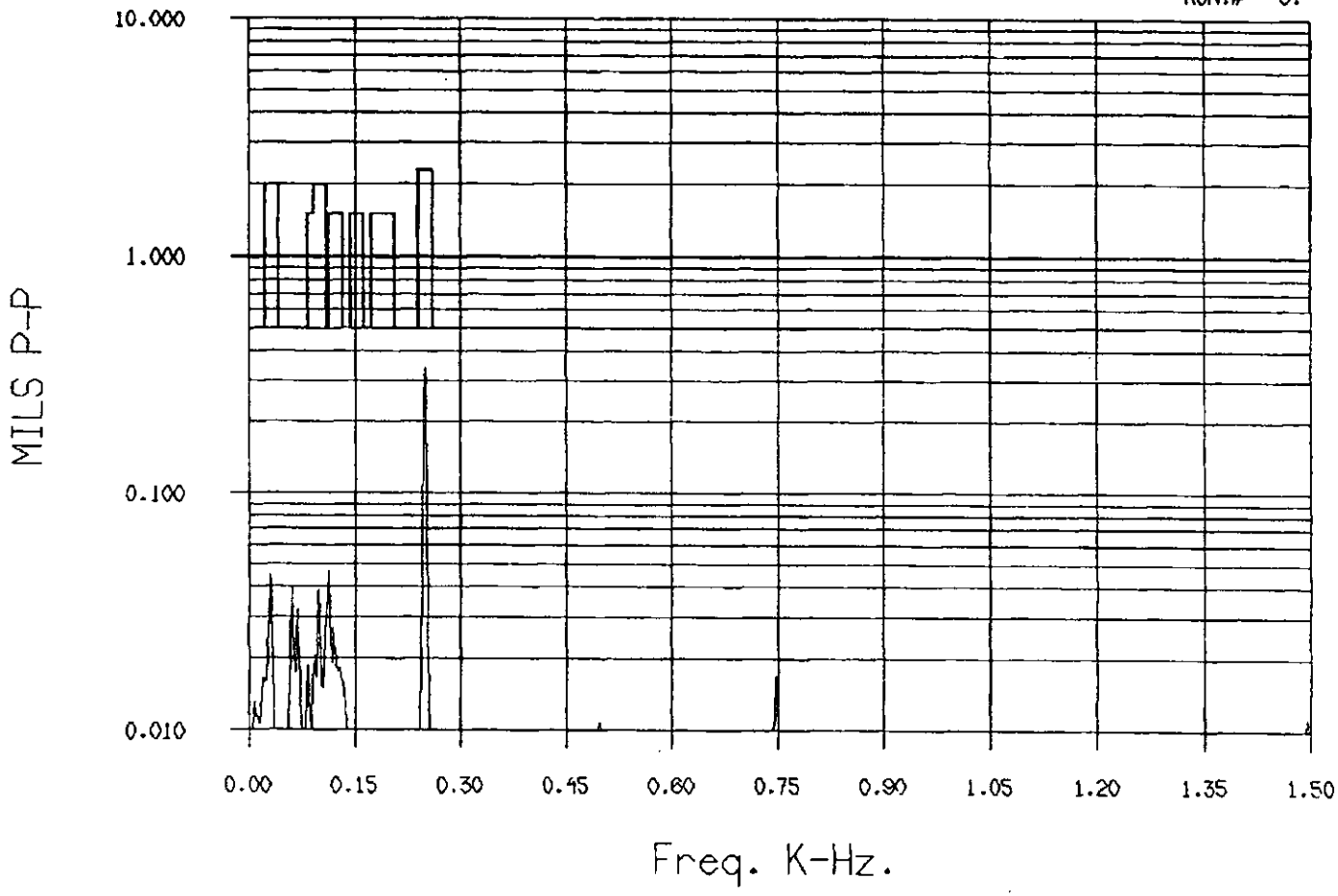
PEAKS (FREQ= AMPL):

29.4= 0.045	111.6= 0.047
59.8= 0.040	118.8= 0.027
68.2= 0.032	249.0= 0.339
83.5= 0.018	746.9= 0.017
98.6= 0.039	1493.9= 0.011

1-E:
NTURB
249.0 Hz.
0.339

OIL TEMP:142. DEG.F
LOAD: 4719. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VBRG.2.H
15-JUN-01
14:14:09
CELL: 11
2-70221 3
1060T

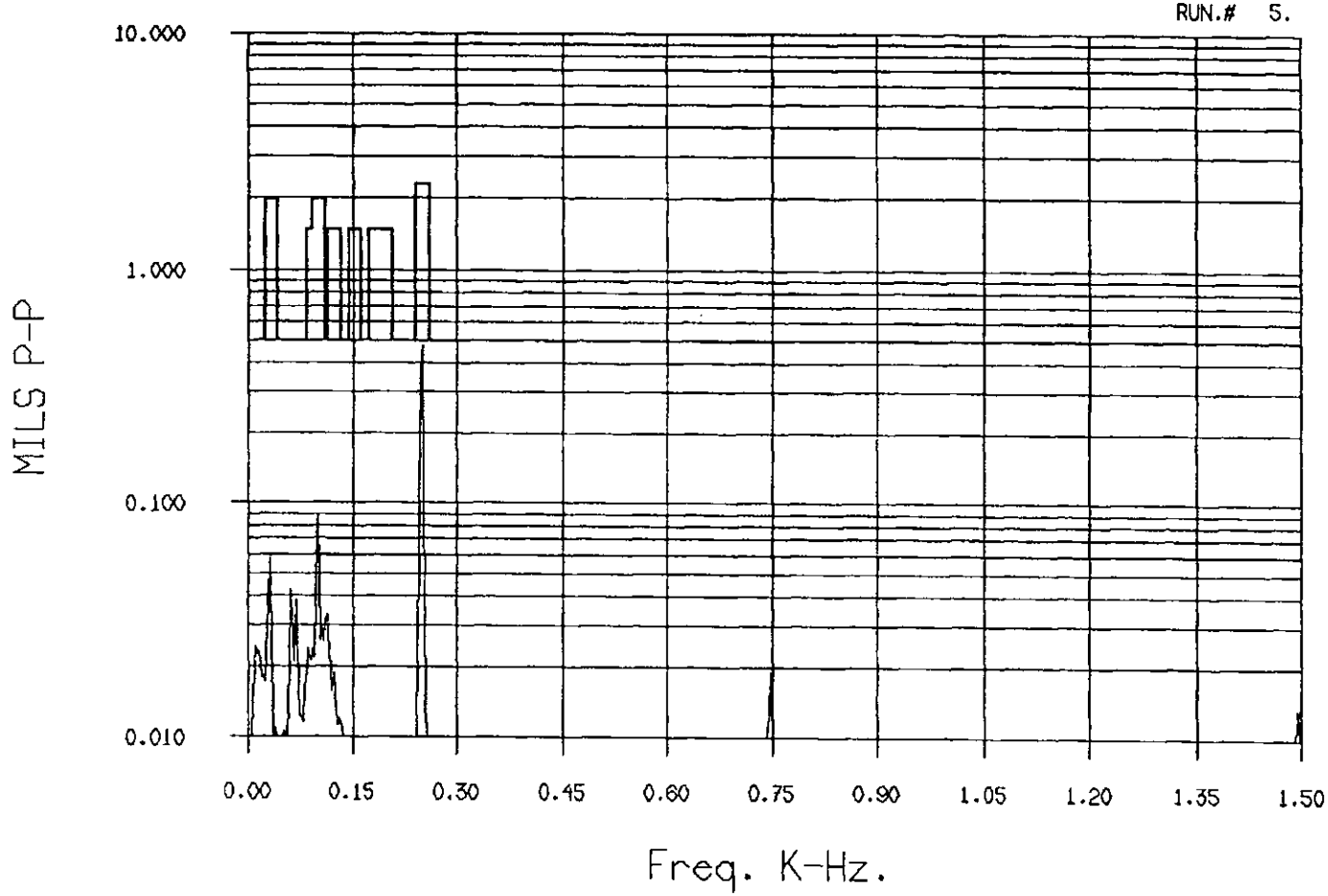
PEAKS (FREQ= AMPL):

29.4= 0.058	747.0= 0.019
60.5= 0.043	995.9= 0.010
68.0= 0.039	1493.9= 0.013
98.8= 0.090	
249.0= 0.477	

1-E:
NTURB
249.0 Hz.
0.477

OIL TEMP:142. DEG.F
LOAD: 4719. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VBRG.3.V
15-JUN-01
14:15:02
CELL: 11
2-70221 3
1060T

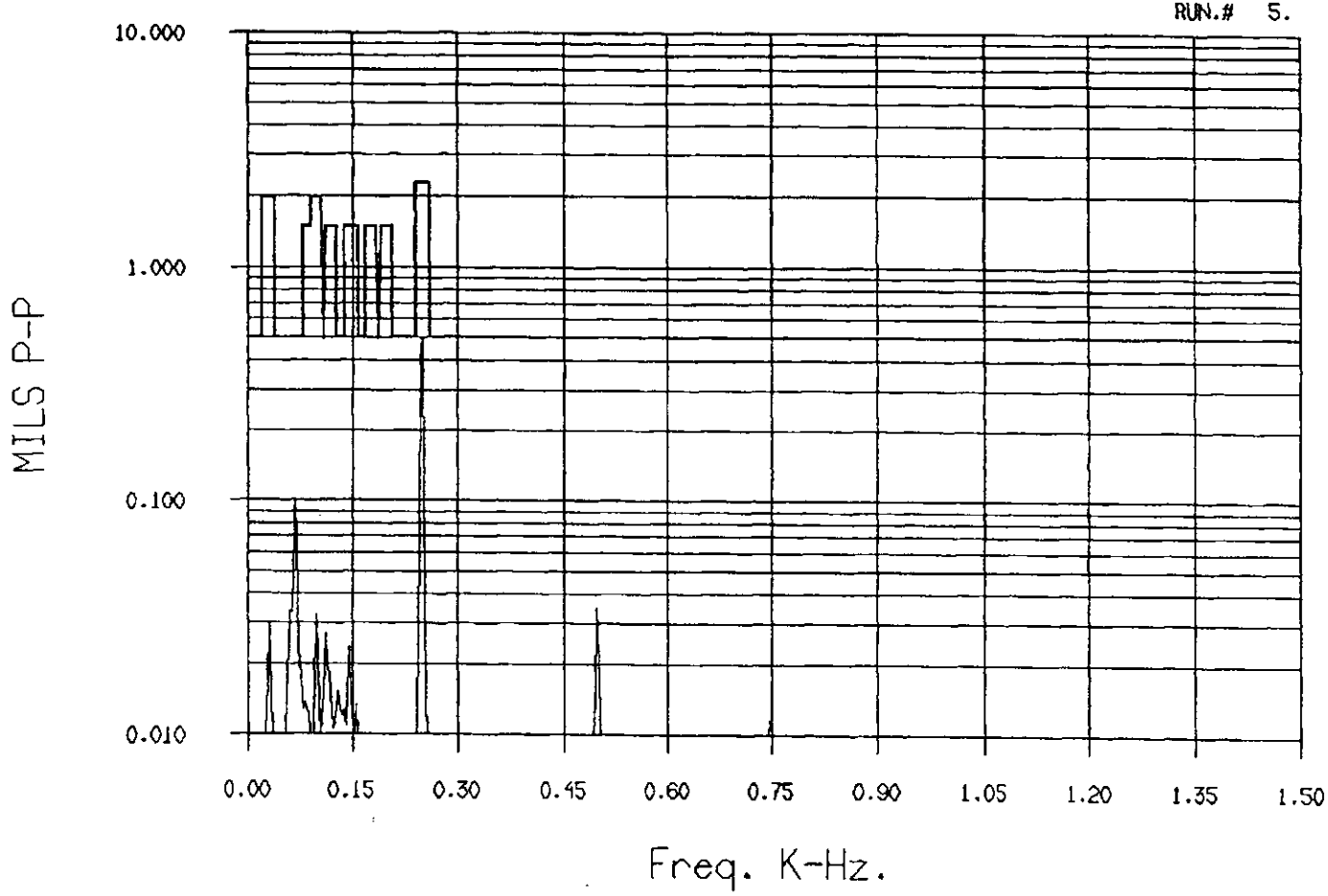
PEAKS (FREQ= AMPL):

29.7= 0.030	153.8= 0.013
68.2= 0.100	248.9= 0.496
98.8= 0.033	497.9= 0.035
113.6= 0.027	746.8= 0.012
144.2= 0.024	

1-E:
NTURB
248.9 Hz.
0.496

OIL TEMP:142. DEG.F
LOAD: 4718. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.



MACHINERY VIBRATION SIGNATURE

VBRG.3.H
15-JUN-01
14:15:02
CELL: 11
2-70221 3
1060T

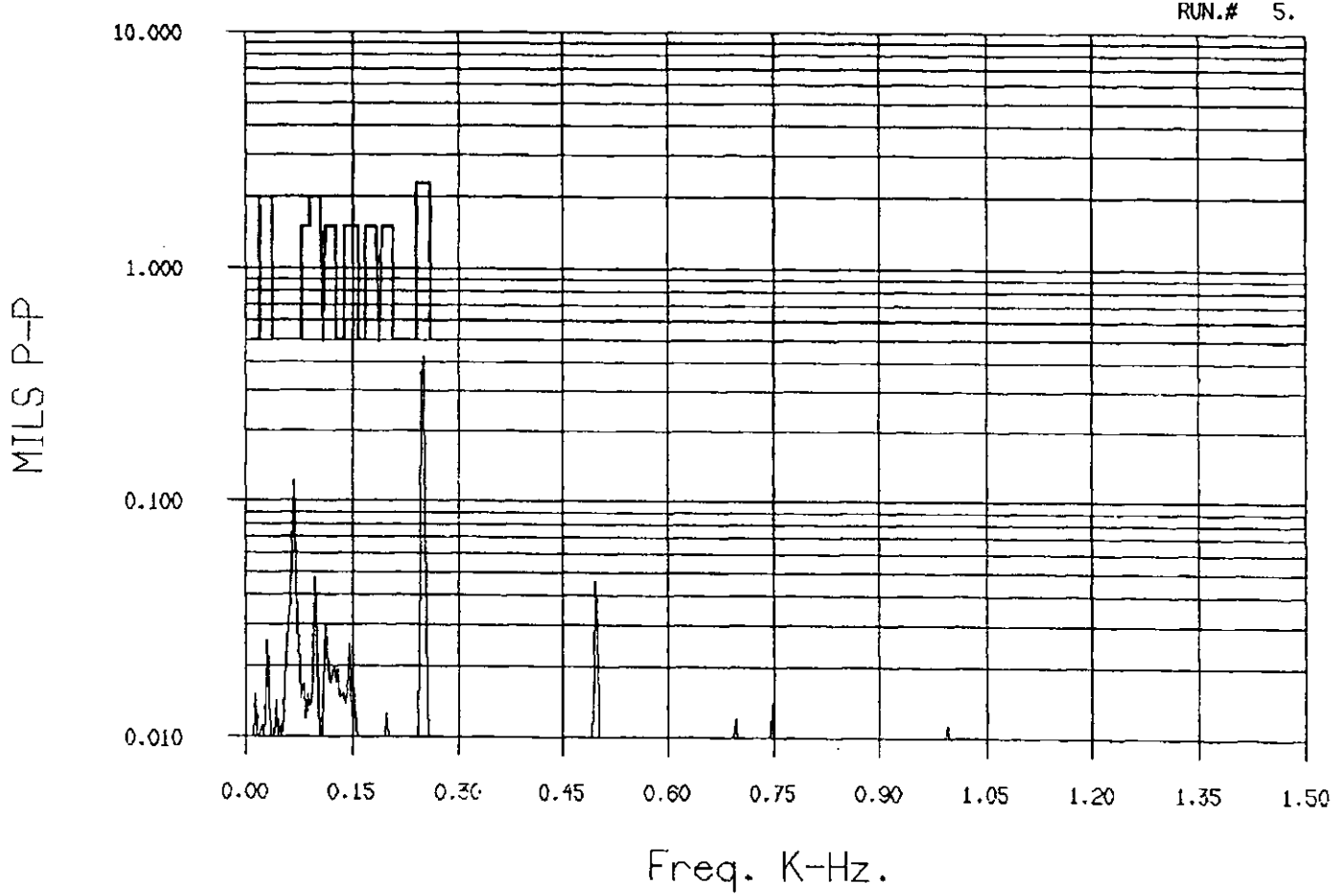
PEAKS (FREQ= AMPL):

11.7= 0.015	113.7= 0.030
29.6= 0.026	144.3= 0.025
41.6= 0.014	151.4= 0.016
68.2= 0.122	248.9= 0.425
98.6= 0.048	497.9= 0.046

1-E:
NTURB
248.9 Hz.
0.425

OIL TEMP:142. DEG.F
LOAD: 4718. KW -UNCORRECTED
FUEL: NGAS

RUN.# 5.

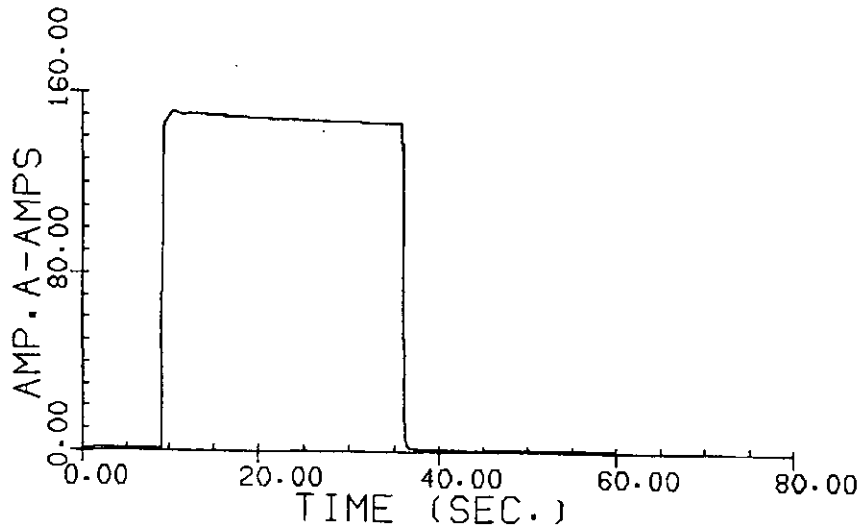


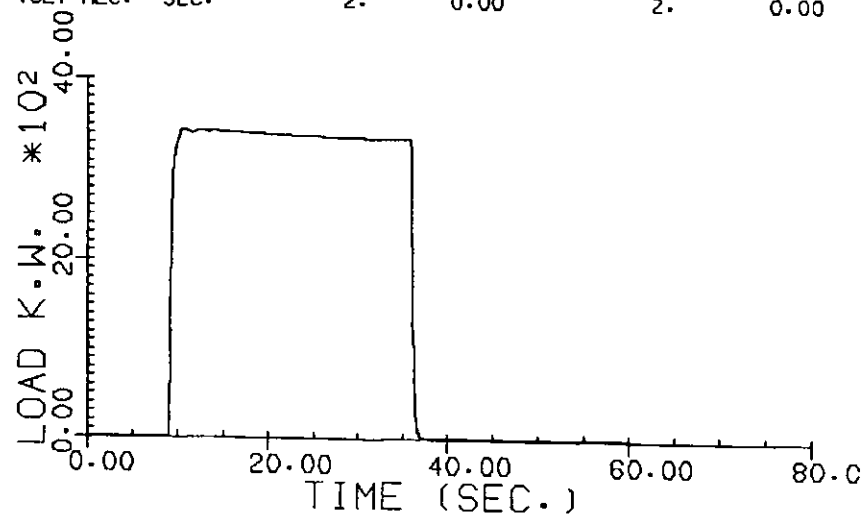
ITEM 6. SUDDEN LOAD TESTS

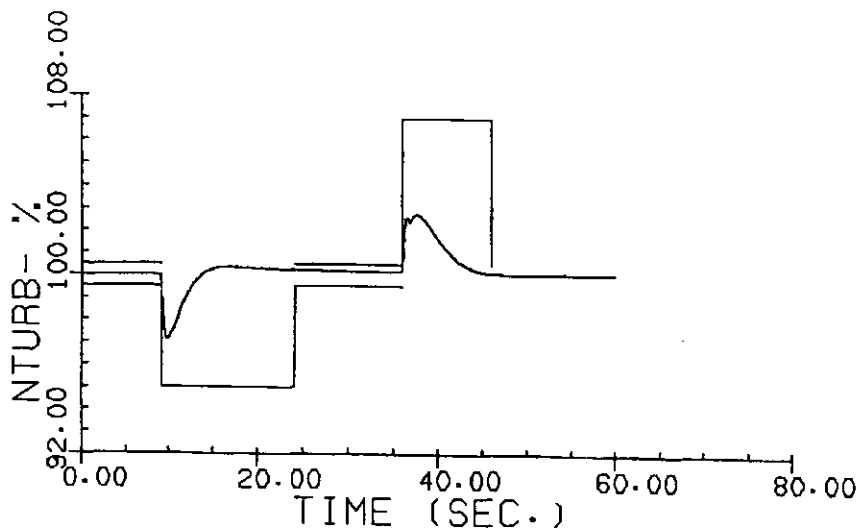
SOLAR TURBINES INCORPORATED

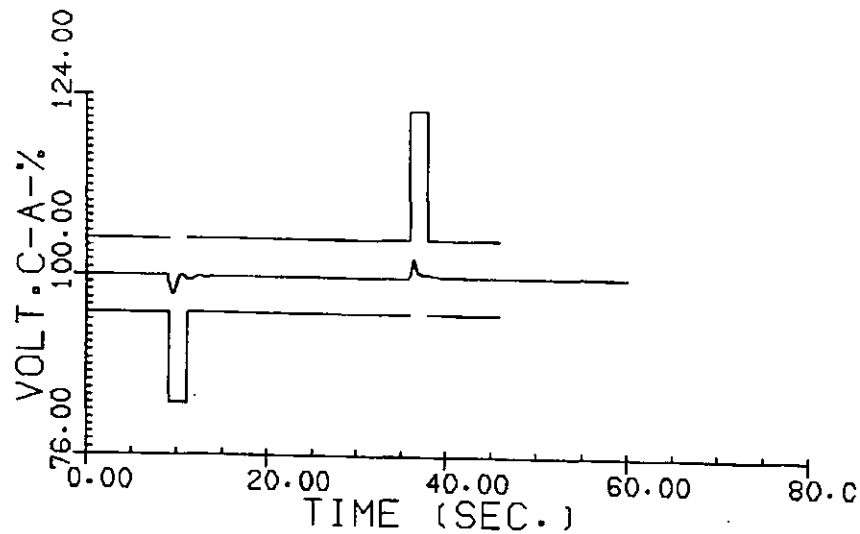
15-JUN-01 21:08:31 11		UNIT NO.	: 3
CUSTOMER NAME	:	FUEL	: NAT.GAS
P.O.NO.	: 2X70221	ENG S/N	: 1060T
AIR INLET TEMP.	: 68.5	KW (ACTUAL)	: 3415.
POWER FACTOR	: 1.00	KW (NO LOSSES)	: 3526.

	ON LOAD		OFF LOAD	
	LIM	ACT	LIM	ACT
SPEED DEV-% :	5.	2.88	7.	2.77
SPEED REC.-SEC:	15.	3.59	10.	6.30
VOLTAGE DEV-% :	17.	2.52	22.	2.53
VOLT REC.- SEC:	2.	0.00	2.	0.00









ITEM 7. DRY EMISSIONS

DRY Emissions (REV 1.0) Page - 1

Engine ID :TDSDAA-1500-007
Engine S/N :1060T
Fuel Type :NATURAL GAS
Test Def File: TT73GEN
Data Taken :15-JUN-01 15:30:51
Load : 2225.78 (50.%) KW

T.AMB	-	DEG.F	:	76.7785
T.NG	-	DEG.F	:	79.9135
P.BARO	-	IN.HG	:	29.4438
%R.H.	-	%	:	55.4219
F.WATER	-	GPM	:	0.0000
WF.AVG	-	PPH	:	1672.4814
WA	-	PPS	:	28.2287
T2.AVG	-	DEG.F	:	594.1273
%NTURB	-	%	:	99.9511
T5.AVG	-	DEG.F	:	1181.8972
T7.AVG	-	DEG.F	:	1009.8003
FUELTYPE	-		:	1.0000
RUN.#	-		:	5.0000
PCD	-	PSIG	:	89.5514
TRIT	-	DEG.F	:	1780.7611
TPZ.C	-	DEG.F	:	3188.9971
TPZ.O	-	DEG.F	:	0.0000
T5.SETPT	-	DEG.F	:	1250.0000

SPEED_INSTABILITY	:	0.03	%
LOAD_INSTABILITY	:	0.10	%KW
T7AVG_INSTABILITY	:	1.28	DEG.F

					MIN SAMPLE	MAX SAMPLE	(***NOT LIMITS***)
CO	-	ppmv	:	14.	14.	15.	
CO2	-	%	:	3.00	2.98	3.01	
NO	-	ppmv	:	9.	9.	9.	
NOX	-	ppmv	:	12.	12.	13.	
UHC	-	ppmv	:	2.	1.	8.	
O2	-	%	:	15.95	15.90	16.02	

Fuel Factor 1.65

RESULTS CORRECTED TO 15% OXYGEN DRY BASIS

	FA(ppmv)	CO2(ppmv)	O2(ppmv)	O2(pph)
ISO NOX	15.	15.	15.	
NOX	14.	14.	15.	2.00
CO	16.	16.	17.	1.42
UHC	2.	2.	3.	0.12

*** ISO CONDITIONS: SEA LEVEL, 60%RH, 14.696 PSIA, 59 DEGF ***

DRY Emissions (REV 1.0) Page - 1

Engine ID :TDSDAA-1500-007
Engine S/N :1060T
Fuel Type :NATURAL GAS
Test Def File: TT73GEN
Data Taken :15-JUN-01 16:17:53
Load : 3346.51 (80.%) KW

T.AMB	-	DEG.F	:	78.1756
T.NG	-	DEG.F	:	79.5864
P.BARO	-	IN.HG	:	29.4417
%R.H.	-	%	:	54.1719
F.WATER	-	GPM	:	0.0000
WF.AVG	-	PPH	:	2044.7130
WA	-	PPS	:	35.3337
T2.AVG	-	DEG.F	:	635.5052
%NTURB	-	%	:	99.9754
T5.AVG	-	DEG.F	:	1181.9501
T7.AVG	-	DEG.F	:	937.2939
FUELTYPE	-		:	1.0000
RUN.#	-		:	5.0000
PCD	-	PSIG	:	116.1957
TRIT	-	DEG.F	:	1801.8483
TPZ.C	-	DEG.F	:	3186.0042
TPZ.O	-	DEG.F	:	0.0000
T5.SETPT	-	DEG.F	:	1250.0000

SPEED_INSTABILITY	:	0.03	%
LOAD_INSTABILITY	:	0.07	%KW
T7AVG_INSTABILITY	:	0.46	DEG.F

					MIN SAMPLE	MAX SAMPLE	(***NOT LIMITS***)
CO	-	ppmv	:	11.	10.	11.	
CO2	-	%	:	2.95	2.93	2.97	
NO	-	ppmv	:	9.	9.	10.	
NOX	-	ppmv	:	13.	13.	13.	
UHC	-	ppmv	:	1.	1.	2.	
O2	-	%	:	16.05	15.99	16.08	

Fuel Factor 1.65

RESULTS CORRECTED TO 15% OXYGEN DRY BASIS

	FA(ppmv)	CO2(ppmv)	O2(ppmv)	O2(pph)
ISO NOX	16.	16.	16.	
NOX	15.	15.	16.	2.60
CO	13.	12.	13.	1.32
UHC	3.	2.	3.	0.15

*** ISO CONDITIONS: SEA LEVEL, 60%RH, 14.696 PSIA, 59 DEGF ***

DRY Emissions (REV 1.0) Page - 1

Engine ID :TDSDAA-1500-007
Engine S/N :1060T
Fuel Type :NATURAL GAS
Test Def File: TT73GEN
Data Taken :15-JUN-01 14:13:06
Load : 4719.01 (100.%) KW

T.AMB	-	DEG.F	:	75.2244
T.NG	-	DEG.F	:	76.0017
P.BARO	-	IN.HG	:	29.4536
%R.H.	-	%	:	56.6563
F.WATER	-	GPM	:	0.0000
WF.AVG	-	PPH	:	2623.3870
WA	-	PPS	:	44.1468
T2.AVG	-	DEG.F	:	704.5972
%NTURB	-	%	:	100.0088
T5.AVG	-	DEG.F	:	1223.9769
T7.AVG	-	DEG.F	:	931.5865
FUELTYPE	-		:	1.0000
RUN.#	-		:	5.0000
PCD	-	PSIG	:	151.0538
TRIT	-	DEG.F	:	1897.4974
TPZ.C	-	DEG.F	:	0.0000
TPZ.O	-	DEG.F	:	3040.8691
T5.SETPT	-	DEG.F	:	1250.0000

SPEED_INSTABILITY	:	0.08	%
LOAD_INSTABILITY	:	0.14	%KW
T7AVG_INSTABILITY	:	1.74	DEG.F

					MIN SAMPLE	MAX SAMPLE	(***NOT LIMITS***)
CO	-	ppmv	:	<1	<1	<1	
CO2	-	%	:	3.03	3.01	3.05	
NO	-	ppmv	:	10.	10.	10.	
NOX	-	ppmv	:	13.	11.	14.	
UHC	-	ppmv	:	<1	<1	<1	
O2	-	%	:	15.91	15.84	15.96	

Fuel Factor 1.65

RESULTS CORRECTED TO 15% OXYGEN DRY BASIS

	FA(ppmv)	CO2(ppmv)	O2(ppmv)	O2(pph)
ISO NOX	15.	15.	15.	
NOX	14.	14.	15.	3.18
CO	2.	2.	2.	0.31
UHC	2.	2.	3.	0.19

*** ISO CONDITIONS: SEA LEVEL, 60%RH, 14.696 PSIA, 59 DEGF ***

RHB

70221-1.pdf
04/16/04 10:38 AM