



DOW CHEMICAL U.S.A.

August 6, 1984

LOUISIANA DIVISION
P. O. BOX 180
PLAQUEMINE, LOUISIANA 70765-0180
804 389-8000

TO: Power-I Employees

YEARLY NOISE LEVEL SURVEY

This report is written and circulated in an attempt to increase your awareness of the known fact that we in the Power block are exposed daily to levels of sound that have the potential to be detrimental to our health. It has been proven in numerous lab tests with lab animals that long-term exposure to low level noise or short-term exposure to high level noise may deteriorate portions of the inner ear. This can result in hearing losses at the respective frequencies and can also indirectly lead to stress related disorders. Therefore, we re-emphasize that the use of hearing protection is MANDATORY anywhere within this block outside of the office buildings, shops, and auxiliary rooms.

The following list is categorized with respect to descending noise levels with the forced draft fans topping the list. In an attempt to better communicate this data, you will find a color-coded map of Power-I graphically showing various noise levels throughout the block posted on the computer room window in the control room.

Hopefully, you will take a few minutes - if for nothing more than to compare what you feel to be our noisiest areas with what is listed as such - to look at the noise levels and the amount of time experts feel you can be exposed to those levels without suffering damage.

Marcus R. James
Mechanical Engineer
Power-I

lml

attachment

POWER ONE
SOUND LEVEL SURVEY

<u>SOUND LEVEL - db</u>	<u>AREA</u>
126	FD4A (inside wall)
126	FD4B (Inside wall)
120	FD5A (inside wall)
120	FD3B (inside wall)
118	FD1B, 2A, 2B, & 3A
117	FD5B (inside wall)
116	#3 Blr. Firing, Aisle
114	Gas Turbine #2 & #3 - Turbine
112	Lower & Upper Firing Aisle - #2 Blr.
110	FD1A
107	#8 BFP
107	Lower Fire Aisle - #1 Blr.
107	FD4B (outside wall)
107	Beneath #4 Turbine
105	Upper Fire Aisle #1 Blr.
104	#4, 5, 6, BFP
104	Beneath #2 Turbine
103	FD4A (outside wall)
103	FD4B (outside wall)
102	BFP #7
102	Beneath #3 Turbine
102	ID 1A, 1B, 2A, 2B
101	Beneath #2 Generator
101	CO ₂ Blower
100	#1,2,3 EDTA pumps
100	#1 & #2 Boiler Steam Header Level
100	#3 Boiler Steam Header Level
100	#2 & #3 G/T Generator
100	#1 S/T Deck West
99	East Stairs to 2801
98	#4 Boiler Burner Levels
97	Top Level #3 Boiler
97	Make-Up Pumps
97	East Door to 2801
96	Gas Regulators #1,2,3
96	Air Compressors 1,2,3
95	#4 & #5 Gas Regulators
95	#4 Boiler Chemical Feed
95	Exciters
95	BFP's 1,2, & 3
95	Blrs. #1,2,3 Chemical Feed Station
95	#5 Blr. Burner Levels
95	#2 Turbine Deck - East

SOUND LEVEL - dbAREA

94	Beneath #1 Generator
94	Top Level #5 Boiler
94	Boiler #5 EDTA Pump
93	FD3B (outside wall)
93	FD5A & 5B (outside wall)
92	#2 & #3 Gas Turbine Auxilliaries
92	#2 Water Intake
92	#1 Water Intake
92	#2 15KV & 2900V Sw. Gr. Room
91	Top Level #1 & #2 Boiler
90	#1 Turbine Deck - East
90	#2 Turbine Deck - West
90	Top Level #4 Boiler
90	Deaerators 1,2,3, & 4
90	Boiler #5 Chemical Feed Station
88	Warehouse w/ door open
85	#1 D.C. Control Room
85	Day Tank Area
84	#1 Battery Room
83	#1 - 15KV Switchgear Room
79	#2 & #3 Gas Turbines - Control Board
78	#1 Aux. Control Room
76	Hall near #1 D.C. Control Room
75	H ₂ Trailer
70	Electrical Shop
69	#2 Aux. Control Room
65	Main Control Room
64	Electrical & Instrument Offices
62	Staff Offices - East End
60	Staff Offices - West End

Survey Conducted by: Marcus James

Sound Level Meter: Bruel & Kjaer, Type 2205

Weighting Network: A

MJ:vg
1/84

DO 076812
CONFIDENTIAL

CONSEQUENCES OF OVEREXPOSURE

COMPOUND: NOISE

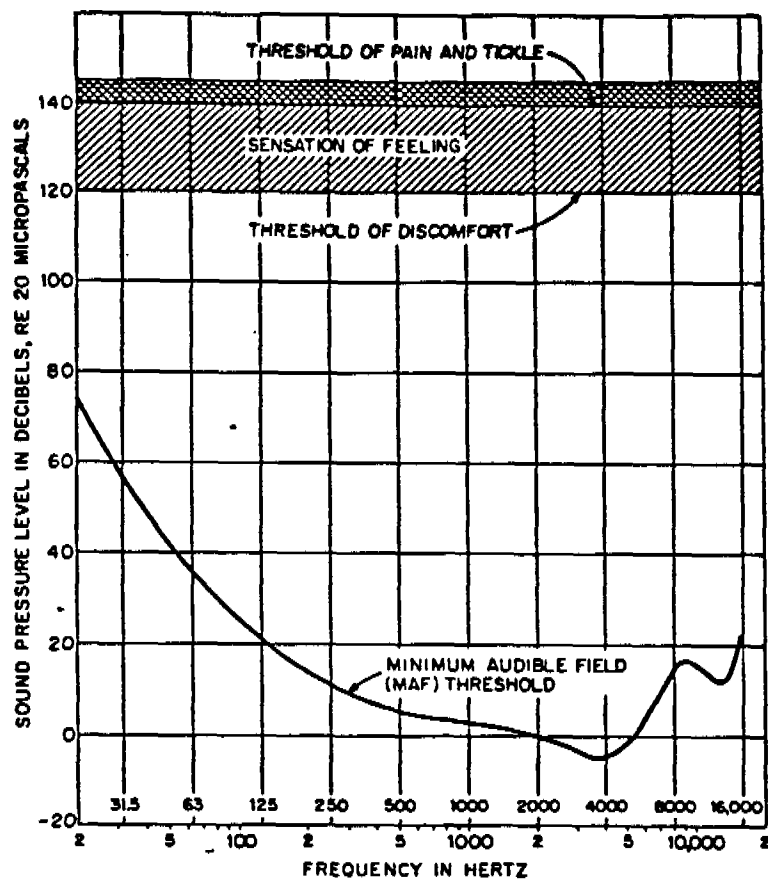
PROLONGED AND REPEATED EXPOSURE TO LEVELS EXCEEDING 90 dB-A MAY CAUSE SEVERE DAMAGE TO THE NERVES IN THE INNER EAR.

THE INITIAL EFFECT IS TO REDUCE THE ABILITY TO HEAR SOUNDS IN THE HIGH FREQUENCY RANGE.

IF UNCHECKED, THE HEARING LOSS CAN EXTEND TO THE FREQUENCIES IN THE NORMAL SPEECH RANGE.

METHODS OF CONTROL

DIHG - 85 dB-A - TO PREVENT HEARING LOSS FOR EXPOSURES OF MORE THAN 8 HOURS PER DAY.



We have seen that with excessive exposure to noise hearing loss can be permanent. Thus, the need for a standard that represents safe exposure to noise is evident. The present OSHA and the Dow Standards are given in Table 2.

Table 2
TLV FOR NOISE

<u>EXPOSURE TIME (HRS)</u>	<u>OSHA STANDARD DECIBELS (A)</u>	<u>DOW STANDARD DECIBELS (A)</u>
16	85	80
8	90	85
6	92	87
4	95	90
3	97	92
2	100	95
1	105	100
0.5	110	105
0.25	115	110
0.125	---	115

(no exposure to noise greater than 115dBA is allowed)

(Impact noise -- maximum allowed is 140 dBA.)