

Tables hand-out which accompanied
Dr. Alexander's presentation. # 6 10/27/80
Many members of the audience were confused
by Table V thinking that this represented the
actual exposures at Texas City/U.C.C.

INVESTIGATION OF APPARENT INCREASED PREVALENCE OF BRAIN TUMORS IN A
U.S. CHEMICAL PLANT

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Presentation to WORKSHOP ON BRAIN TUMORS IN THE CHEMICAL INDUSTRY
NEW YORK ACADEMY OF SCIENCES
OCTOBER 27, 1980

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048614

Table 1.

**WORK HISTORY DATA FOR 18 PRIMARY BRAIN
CANCER CASES IN A TEXAS PETROCHEMICAL PLANT**

<u>Case</u>	<u>Date of Hire</u>	<u>Date of Death</u>	<u>Age at Death</u>	<u>Length of Employment (years-months)</u>	<u>Job Title</u>	<u>Department</u>
1	12/16/40	05/15/64	51	3-6	Operator	Production
2	05/18/41	02/19/66	56	24-8	Operator	Production
3	07/29/41	05/18/76	66	31-8	Foreman	Maintenance
4	11/30/41	12/13/65	55	20-4	Operator	Production
5	07/09/44	10/28/79	59	35-0	Boilermaker	Structural Shop
6	09/18/44	05/21/74	55	0-1	Operator	Production
7	09/18/46	03/07/79	55	32-3	Laborer/Oiler	Maintenance
8	09/26/46	03/22/73	63	26-6	Operator	Production
9	09/21/48	07/02/75	49	2-1	Pipefitter	Maintenance
10	03/02/49	06/05/71	61	22-3	Operator	Production
11	01/25/50	01/13/68	66	16-7	Equip. Operator	Maintenance
12	10/19/50	05/14/74	59	17-1	Operator	Energy Systems
13	10/23/50	02/18/80	57	28-10	Operator	Production
14	09/19/51	01/08/74	52	22-3	Machinist	Machine Shop
15	04/27/53	10/03/56	33	0-1	Machinist	Maintenance
16	08/17/53	04/05/62	30	8-7	Weighmaster	Shipping
17	08/21/53	05/05/71	44	17-3	Operator	Production
18	10/30/53	12/21/78	49	24-8	Weighmaster	Shipping

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Table II. CURRENT PLANT WORKFORCE BY COUNTY OF RESIDENCE

<u>County of Residence</u>	<u>Type of Employee</u>		<u>Total</u>	<u>Percent</u>
	<u>Hourly</u>	<u>Salaried</u>		
Galveston	1,389	609	1,998	90.0
Harris	44	110	154	6.9
Brazoria	41	15	56	2.5
Other	<u>7</u>	<u>4</u>	<u>11</u>	<u>0.5</u>
Total	1,481	738	2,219	100.0

Source: Data provided by company.

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Table III. DEATH CERTIFICATE AND MEDICAL RECORDS DATA FOR 18 PRIMARY
BRAIN CANCER CASES IN A TEXAS PETROCHEMICAL PLANT

Case	Race/ Sex	Residence	Place of Birth	Cause of Death	
				Death Certificate	Medical Records
1	WM	Galveston	Texas	Carcinoma of Brain	Glioblastoma (MR)*
2	WM	Galveston	Missouri	Malignant Brain Tumor	Meningioma (A)
3	WM	Harris	Texas	Brain Tumor	Glioblastoma (A)
4	WM	Galveston	Texas	Brain Tumor-Meningioma	Meningioma (MR)
5	WM	Galveston	Louisiana	Glioblastoma	Glioblastoma (SP)
6	WM	Galveston	Texas	Brain Tumor-Glial IV†	No Records Available
7	BM	Galveston	Texas	Glioblastoma	Glioblastoma (MR)
8	WM	Galveston	Texas	Glioblastoma	Glioblastoma (SP)
9	WM	Harris	Texas	Astrocytoma	Astrocytoma-Grade I (SP)
10	WM	Galveston	Texas	Malignant Glioma	Glioblastoma (MR)
11	WM	Galveston	New Mexico	Glioblastoma	Glioblastoma (A)
12	WM	Galveston	Norway	Glioblastoma	Glioblastoma (SP)
13	WM	Galveston	Texas	Glioblastoma	Astrocytoma-Grade IV†(MR)
14	WM	Galveston	Texas	Glioblastoma	Glioblastoma (A)
15	WM	Harris	Texas	Glioblastoma	No Records Available
16	WM	Galveston	Louisiana	Brain Tumor	Glioblastoma (A)
17	WM	Galveston	Texas	Malignant Glioma	Glioblastoma (SP)
18	WM	Galveston	Texas	Brain Tumor	Glioblastoma (A)

*Source: MR-Medical Records; A-Autopsy; SP-Surgical Pathology.

†Astrocytoma Grade IV and Glial IV are equivalent terms for Glioblastoma multiforme.

Table IV.

**BRAIN AND OTHER CNS CANCER MORTALITY, 1950-1969:
AVERAGE ANNUAL AGE ADJUSTED RATES PER 100,000**

<u>Location</u>	<u>White Male</u>	<u>White Female</u>	<u>Black Male</u>	<u>Black Female</u>
United States	4.4	2.9	2.3	1.5
Texas	4.3	2.9	1.9	1.5
Galveston County	4.5	2.9	2.5	2.1
Harris County	4.5	3.6	2.0	1.9
Brazoria County	3.1	3.9	1.2*	1.5

*Based on one case.

The range of U.S. rates for white males for states with >10 deaths from 1950-1969 was 3.1-5.4. The range of Texas rates for white males for counties with >10 deaths from 1950-1969 was 2.3-10.8.

Source: U.S. Cancer Mortality by County, 1950-1969, National Cancer Institute, DHEW Pub. No. (NIH) 74-615, Bethesda, Maryland, 1974.

Table V.

EXPERIMENTAL BRAIN CARCINOGENS

2- Acetylaminofluorene
 Acrylonitrile
 1-Aryl-3,3-Dialkyltriazenes
 Azoethane*
 Azoxyethane*
 Azoxymethane
 Butylnitrosourea
 Cycasin
 1,2-Diethylhydrazine
 Diethylnitrosamine*
 Diethyl Sulfate*
 Dimethylbenzanthracene*
 Dimethyl Sulfate*

Elaionycin
 Ethyl Methanesulphonate
 Ethylnitrosobiuret*
 Ethylnitrosourea*
 1-Methyl-2-Benzyl-Hydrazine*
 Methyl Methanesulphonate
 Methylnitrosourea*
 Methylnitrosourethane (intraplacental)
 Procarbazine*
 Propane Sultone
 Propylene Imine
 Pyrrolizidine Alkaloids
 Vinyl Chloride

*Transplacental carcinogenesis.

Table VI.

EPIDEMIOLOGICAL STUDIES:
CLUES TO HUMAN BRAIN CANCER ETIOLOGY

Aluminum Workers
Asbestos Insulation Workers
Anti-Convulsant Use
Farm/Rural Residents
Geographic Clustering
 Kentucky, Rhone Valley
Halomethanes in Drinking Water
Lead Smelter Workers

Machinists
Oil Refinery Workers
Pattern Makers
Petrochemical Workers
Rubber Workers
Toxoplasmosis
Vinyl Chloride Workers

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DOCUMENT

Bates number ^{UCC} 048621-048622 ^{UCC} has been skipped