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**Item ID Number** 02181

**Author**

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**Report/Article Title** Typescript: Proposed Worker Surveillance, BSOB,  
Draft June, 19, 1981

**Journal/Book Title**

**Year** 0000

**Month/Day**

**Color**

**Number of Images** 9

**Description Notes**

PROPOSED WORKER SURVEILLANCE, BSOB

EXISTING DATA BASE

Based on data in the possession of the NYS Department of Health at this time, partial or complete records exist on 479 persons working for 20 different firms not including a small miscellaneous category. They are shown by employer and level of exposure categories in Appendix I. It should be pointed out that information on both employer and exposure was obtained from the individuals themselves, either at the time of the blood drawing when a Binghamton General Hospital medical record questionnaire was completed, or during a personal interview with a nurse.

Based on place of exposure, the 208 persons actually in the BSOB would be the most likely to have sustained genuine exposure. In addition, the group in the basement or subbasement (unknown if this was the garage or building) and the 65 with unknown exposure are considered suspect for building exposure until further information can be obtained on them. The other exposure categories would appear to represent minimal non-exposures to BSOB soot.

Wide variation in duration of exposure was indicated as well. At one end of the spectrum, the 33 NEPCO employees worked a minimum of 100 hours in the building, with many in excess of 700 hours. The OGS clean-up crew spent between 50 and 100 hours in the building. A few OGS employees have spent more than 100 hours in the building. The Miske Electric electricians all appear to have spent less than 100 hours in the building. Virtually all other persons seem to have spent no more than a few minutes to a few hours in the building.

*- different degrees of protection not taken  
NEPCO - some protect  
Miske Electric - not always  
- degrees of exposure - from hours or minutes  
or crawling  
present during heat conversion*

Department to their private physicians. Most of the remaining individuals either have no private physician or failed to indicate one at the time of evaluation.

This is all I had  
of page 2

on an as needed basis. A telephone answering service is on line to refer health inquiries from individuals in this group to the NYSDH. If the inquiry is in response to a health problem that might reasonably be related to exposure to the BSOS, arrangements will be made, at no expense to the individual, to be seen by a local internist with referral to a dermatologist if deemed appropriate. Both of these evaluations are offered for general health screening without regard to etiology and, as such, no attempt will be made to summarize or analyze the data from the group as a whole.

#### SUBSET EVALUATIONS

The most intensive surveillance monitoring and analytical efforts will be focused on a small subset of individuals with well-documented high exposure. High exposure can be defined by both place and duration of exposure. Since contamination is largely an intra-building problem, those persons who have entered the building since the fire are the most likely to have encountered significant exposure. Of the groups who have been in the building, duration apparently was greatest for NEPCO cleaners, followed in decreasing order of duration by the OGS clean-up crews, Miske electricians, and National Insulation cleaners. Other groups in the building tended to be small and spend only limited time in the building though individual exceptions exist. Unarguably the most exposed single group was the NEPCO cleaners. However, the fact that they are more or less continuously involved in toxic clean-ups of one sort or another renders any information gleaned from this group difficult if not impossible to interpret. While data will be collected on this group, no analysis will be attempted on this information.

The general surveillance scheme is shown graphically in Appendix III. The general health screening which will be provided to persons whose exposure was limited to outside the building has already been described. Persons who have been inside the BSOB but for only a short time will have a similar blood screen with an additional tube of blood saved for potential future reference. Those persons determined to have spent a long time in the BSOB will have a similar blood screen with sera being saved. A portion of the saved sera will be used to determine a serum PCB level. The long duration BSOB exposures group will also be offered a physical examination.

Because of what is known to occur in animals and humans exposed to PCBs and other compounds in this group, certain a priori hypotheses can be advanced as to health effects one might see amongst the population exposed to the soot from the BSOB. Conclusions on the human health effects of exposure to BSOB soot will be limited to analytical results which are biologically plausible and have been generated in response to these pre-stated hypotheses. The organ systems of most concern are the liver and integument. Since a diagnosis of liver disease is often arrived at only late in the natural course of an illness, we will focus on liver function test abnormalities under the presumption that they are surrogate markers of potential or real future disease. All persons who've been in the building since the fire for a minimum of 25 hours will be included in this analysis. Subsets among this subset may also be analyzed separately. The mean values for several liver function tests drawn while in the building will be compared to the mean values obtained after having terminated exposure for a period of time. The hypothesis, succinctly stated, is that there is an association between exposure to the building and an alteration (either up or down) in liver function tests. The hypothesis must be two-tailed because initial bloods were not

Will want  
 to highlight  
 initial  
 concern -  
 heavy  
 during  
 exposure  
 concern is  
 looking  
 level of  
 protection

timing then, follow-up liver tests might be expected to show a rise or a fall. The liver function tests which will be analyzed include SGOT and GGTP.

The physical examinations will give special attention to the skin. Chloracne, a condition essentially pathognomonic for exposure to PCBs and related compounds, will be looked for. Chloracne is known to require a latent period before its appearance. It is also very persistent. As such, a single examination approximately six months after initial contact seems a reasonable time to look for such a condition. Since no cases of chloracne are expected, observation of even a single documented case will be presumptive evidence of an adverse health effect.

Skin biopsy of suspect lesions will be required to document chloracne.

Dr. Kimbrough of CDC in Atlanta, GA, has agreed to review slides from any biopsied lesions to determine if the changes characteristic of chloracne are present.

In an attempt to quantitate exposure to PCBs in the building, a comparison will be made between the initial serum PCB values obtained either before or shortly after entering the building, and the value obtained at follow-up. This evaluation will be performed on values from all persons who were in the BSOB a long time and for whom an initial sera for PCBs is available.

To make data as comparable as possible, several things will be done whenever possible. First, the same laboratory will be used for both initial and follow-up general blood screening. Second, a limited number of physicians familiar with chloracne and other PCB effects will be utilized for physical exams. Finally, serum for PCB levels will be sent to a reputable laboratory

well experienced in PCB analysis. They will be sent both initial and follow-up sera at the same time and asked to analyze them blind as to the time that they were drawn.

SUMMARY

In summary, the surveillance of persons potentially exposed to contaminants in the BSOB will involve a 3 tiered approach. Those whose only exposure was outside the BSOB will receive a follow-up blood screen while those exposed inside the BSOB may have sera saved for future testing, serum PCB determinations and/or a physical examination depending on duration of time spent in the building. Analysis of information on health effects will be limited to selected liver function tests and a search for chloracne. An attempt to quantitate exposure to PCBs will be made by comparing initial and follow-up serum PCB levels. If no health effect or exposure is demonstrated, no further investigation is expected. Should significant effects or exposure be found, additional investigative steps might be indicated.



## APPENDIX I

Place of Exposure

Firm or Group	Total N	In SOB Bldg.	In Garage Only	In City or County Bldg.	In Cars From Garage	Exposed to			Unknown
						In B or SB Bldg. or Garage	Bldg. Materials Outside of Bldg. or Near Bldg.	Definite Non- Exposure	
1. New York Telephone	6	3	0	1	0	0	0	0	2
2. Press	6	4	1	0	0	0	0	0	1
3. Firemen	32	27	0	0	0	1	1	0	3
4. Police	39	4	4	17	7	0	0	0	7
5. AJ Cerasaro	14	2	0	0	0	12	0	0	0
6. Talent Search	4	0	0	0	0	0	4	0	0
7. NIOSH	1	1	0	0	0	0	0	0	0
8. Broome County	60	6	9	19	14	7	0	1	4
9. City of Binghamton	54	2	0	48	0	0	0	0	4
10. Bldg. Services Aides	3	0	0	0	0	0	0	3	0
11. BGH Staff	4	0	0	4	0	0	0	0	0
12. NEPCO	48	34	0	0	0	0	0	8	6
13. New York Gas & Electric	21	19	0	0	0	0	0	0	2
14. Valley Welding	1	0	0	0	0	0	1	0	0
15. Fanta Sea	2	0	2	0	0	0	0	0	0
16. Central Steel	6	4	0	0	0	0	0	0	2
17. OGS	66	48	0	8	0	2	2	0	6
18. Miske Electric	33	29	0	0	0	0	0	0	4
19. NYS, Miscellaneous	39	22	1	1	0	2	4	1	8
20. Security	20	1	0	0	0	2	13	2	2
21. Miscellaneous	20	2	0	1	0	0	3	0	14
<b>TOTALS</b>	<b>479</b>	<b>208</b>	<b>17</b>	<b>99</b>	<b>21</b>	<b>26</b>	<b>28</b>	<b>15</b>	<b>65</b>

Biochemistry Screen

Glucose

BUN

Creatinine

Total bilirubin

Direct bilirubin

Total protein

Albumin

Uric acid

Alkaline phosphatase

SGOT

LDH

SGPT

GGPT

Cholesterol

Triglycerides

Calcium

Phosphorus

Acid phosphatase

Serum iron

Total iron binding capacity

APPENDIX III

