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Description Notes Several letters in which the authors respond to recommendations regarding the clean-up of the Binghamton State Office Building.

**NEW YORK STATE DEPARTMENT OF HEALTH
OFFICE OF PUBLIC HEALTH**

TO Dr. Young

DATE 8/24/83

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Special Projects Staff (102C)

FROM Dr. Huffaker



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August 15, 1983

8/22
CC: N Kim
GE

Dr. Robert H. Huffaker
Associate Director
Office of Public Health
Corning Tower
The Governor Nelson A. Rockefeller
Empire State Plaza
Albany, NY 12237

Dear Dr. Huffaker:

Thank you for your letter of July 27 concerning the Binghamton State Office Building project. In reply to your questions, my answers are as follows:

- 1) Medical surveillance: Data on reproductive outcomes and birth defects merit consideration, along with cancer and other causes of death.
- 2) Re-entry standards for cleaners without respirators: I would accept Dr. Kim's recommendations.
- 3) Re-entry standards (for air and surface) for office workers and the public: the reasons for the disparity between Dr. Kim's values and the Battelle values need clarification.

I hope that my remarks are helpful to you. If there is anything I can do to be of further assistance, please don't hesitate to call on me.

Sincerely,

Arthur C. Upton, M.D.
Professor and Chairman

ACU/cr

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DIRECTOR
PUBLIC HEALTH



Centers for Disease Control
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August 12, 1983

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Albany, New York 12237

2) 8/17
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3) pdg.
with others

Dear Dr. Huffaker:

I will try and address, in sequence, the three items you would like to have comments on.

1. Medical surveillance

In making my recommendations, I assume that the dose the workers have received has been minimal to nonexistent, since the workers have worn protective clothing and respirators. Any breaks in technique may theoretically have resulted in some exposure. However, it must also be remembered that the effects of short-term exposure to concentrations of the chemicals that do not cause acute health effects would not result in delayed effects that could be measured with reasonable confidence by presently available techniques. Furthermore, once exposure has stopped, any toxic effects that may have occurred would also be reversible.

For all of these reasons, I do not think that it will serve any useful purpose to conduct any additional laboratory tests and medical examinations. It is assumed that general medical care is available to this worker population through normal channels. It should be explored whether establishing a followup registry of these types of worker populations would be feasible. Criteria for feasibility would be that the number of workers would have to be sufficiently large and a minimum length of exposure would be required. Since these workers may be exposed to many different chemicals over their lifetime, this also needs to be evaluated.

2. Re-entry standards for cleaners without respirators

Having reviewed the data tabulated in the document entitled: Chemical Data on Air Samples from the Binghamton State Office Building, by Eadon, et al, I agree that according to the air measurements, and the various calculations, the average "TCDD equivalent" is 14 pg/m³. For an 8 hour

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exposure, even at inhalation of a total of 10 m^3 of air, the total exposure would be 140 pg per day or at a body weight of 80 kg 1.8 pg/kg, at 70 kg it would be 2 pg/kg, and at 60 kg it would be 2.3 pg/kg. This would be the exposure, but not necessarily the dose since not all of the inhaled material is retained in the body. Based on these calculations, it would be safe to enter the building without respirators. However, I would like to know if these levels remain the same when the air flow and the temperature are increased.

At these air concentrations, the building can be vented to the outside since these levels are below levels that have been detected in effluents from incinerators.

Since the building has reached a stage of cleanliness, which makes it now safe to enter without respirators, and safe to vent, it is not clear to me why the cleaners are still needed in the building.

I would like to recommend that the building, including air ducts, be inspected before any changes are instituted.

3. Re-entry standards (for air and surfaces) for office workers and the public

As long as air levels can be maintained at 14 pg TCDD/m^3 , surface levels would not contribute much to overall exposure and it would be safe to reoccupy the building. However, before this is done, additional air samples with the building vented to the outside and at temperatures normally maintained in the building should be obtained.

The building should be inspected as recommended under Item 2.

In summary, I would like to point out again that any exposures cleaners or office workers would incur would not be for their lifetime, and would be less than what could conceivably be received from contaminated fish. (At 10 ppt in fish the dose for 100 grams of fish would be 1000 pg/person). Furthermore, levels would be decreasing over time.

Sincerely yours,

Renate Kimbrough, M.D.
Renate D. Kimbrough, M.D.
Medical Officer
Center for Environmental Health



STATE UNIVERSITY OF NEW YORK AT BINGHAMTON

Binghamton, New York 13901

5 August 1983

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Dr. Robert H. Huffaker
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Albany, New York 12237

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**DIRECTOR
PUBLIC HEALTH**

Dear Dr. Huffaker:

Based on review of the latest analyses of air samples from the Binghamton State Office Building and the revised risk assessment by Drs. Kim and Hawley, I have made a recommendation to Mayor Juanita M. Crabb. She has asked me to transmit the recommendation to you and I am pleased to do so.

The question of what levels of contaminants constitute an acceptable level of risk has been addressed by the indirect technique of risk assessment. However, all risk assessments necessarily are built on assumptions due to lack of experimental data, in this instance starting with the assumptions that there is a no-effect level for dioxins and that such level when fed to laboratory animals can be extrapolated to an inhalation level for humans.

Our recommendation for re-entry is to use a direct experimental approach.

This approach involves averaging the results of air measurements and of surface measurements of two separate "reference" office buildings in the Greater Binghamton area. Each result should then give normal or baseline levels against which BSOB levels could be compared. At least two substantial advantages accrue from this approach:

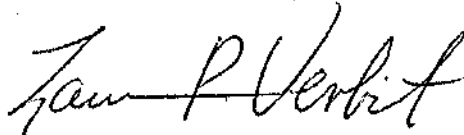
- 1) when the levels in the BSOB are found to be similar to the "baseline" buildings levels, most scientists would endorse the statement that the BSOB poses no undue health risk; i.e., the building has been cleaned, the building is "safe."
- 2) the concept that the BSOB is found to be as clean as two local buildings which have had no known contamination is one that should be readily understood by the general public. It constitutes the most powerful argument possible that the BSOB has been successfully cleaned.

RECOMMENDATIONS FOR RE-ENTRY CRITERIA

- 1) The same contaminants that have been tested for in the BSOB are to be tested for in the "baseline" buildings.
- 2) The concept of "2,3,7,8-TCDD equivalents" will be used whenever possible.
- 3) "No undue health risk" will be deemed to occur when the BSOB contaminant levels are the same as the corresponding levels in the "baseline" buildings. "Same" shall mean that the BSOB level is within one-and-one-half (1.5) standard deviations of the corresponding "baseline" buildings level. At such time, the APC filtration equipment in the BSOB may be removed and workers may enter without protective gear, if that is the judgement of the State Department of Health.
- 4) Air and surface testing on alternate floors of the BSOB are to continue on a quarterly basis until the levels of "2,3,7,8-TCDD equivalents" either remain constant within the above-mentioned standard deviations or decrease for three successive quarterly monitoring periods. At that time, monitoring shall continue on an annual basis until such time as the building shall be demolished under controlled conditions.

It is our hope that these recommendations will contribute toward the reopening of the BSOB as a clean and safe workplace. I shall be glad to answer any questions.

Yours sincerely,



Lawrence P. Verbit
Professor of Chemistry
Chemical Consultant, City
of Binghamton

cc: Mayor Juanita M. Crabb
City of Binghamton distribution



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OFFICE OF THE DIRECTOR

August 4, 1983

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Albany, N.Y. 12237

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AUG 8 1983

**DIRECTOR
PUBLIC HEALTH**

Dear Dr. Huffaker:

I've received the revised risk assessment material you sent regarding the Binghamton State Office Building and will try to answer your three questions as best as I can.

For me, the most difficult issue is the question of medical surveillance. If the Department were not already committed to some form of active followup, I would recommend no followup at all, since serum PCB levels are not increased and since it seems unlikely therefore that meaningful increases in TCDD/TCDF are present. Unfortunately, one can't be absolutely certain of the latter point since direct tissue assays are not practical. That slight uncertainty and the continued expression of public concern appear to be the reasons that commitment for future surveillance was made. Accepting that decision (although not entirely concurring in it), I would recommend a relatively lenient surveillance protocol. I would not, for instance, advocate periodic physical examinations or frequent active followup of any sort. The exposure parameters in this case make it highly likely that such measures would be both non-productive and unnecessarily (? unethically) intrusive or unsettling for subjects. Instead (and at most), I would suggest a brief health questionnaire update (no more often than yearly) by mail, followed by phone if no response, with medical record/physician followup to confirm reported major illness. This can of course be coupled with passive registry linkage studies using health data sets maintained in the State. I would not recommend that any laboratory testing be done for the reasons cited above. If you feel commitment is already in place for some clinical lab screening, then I suppose liver function testing would be the way to proceed. However, given the choice, I would strongly recommend no testing. I also see no reason for repeat PCB testing since you know all you can usefully know at present. If TCDD/TCDF testing becomes practical in the future, of course, that might be carried out in an effort to answer the lingering concern about increased TCDD/TCDF in the face of normal serum PCB. Finally I would limit any surveillance to those persons who had actually been on site: 327 persons at most, I believe, according to the report presented on 17 June.

Regarding the second question, I would think that the current air data show levels compatible with worker reentry at this point without respirators and thus compatible also with venting.

On the third question, I believe that Dr. Kim's liberal estimate for public/office worker reentry is acceptable. In this regard, and in answer to the five questions

at the end of her revised risk assessment document, I believe that each of the several surface guideline assumptions is acceptable but is clearly on the conservative side (maximizing estimates of contact). Therefore the "liberal" value of $130\text{ng}/\text{m}^2$ seems the one to accept. There is some discrepancy here between your letter and her document. I assume you are referring to her values of 130 and $15\text{ng}/\text{m}^2$ as cited on page 7 of her draft. Her draft seems also confusing on pages 4 and 5 where formula (3) may be mislabelled and where the material at the top of page 5 perhaps should be labelled 3, not b. I found it a bit hard to follow.

I hope these comments are useful. Any thoughts on the latter two questions should not be given particular weight relative to other panel members since such risk level calculations require technical understanding that remains somewhat beyond my field of expertise.

Sincerely,



Clark W. Heath, Jr., M.D.
Professor of Community Health

CWH/bg