DRAFT

To: J. D. Burdick, M.D.

From: E. G. LaChance, M.D.

SUBJECT: Vinyl Chloride and Related Topics May 12, 1977

Following a review of the vinyl chloride presentations by Dr. Burdick and Dr. Robinson in a resume' of the Louisville seminar concerning vinyl chloride, the following discussion is made for your consideration, editing and/or approval.

1. We have recommended that the routine x-ray of the distal phalanges be discontinued in the initial examination for vinyl chloride. This complication of acroosteolysis developing in the initial workers has not been reported in recent years due to improvement in engineering techniques. We feel that this is a non-productive area in the care of the worker. This is not covered as a ~~portion~~ Part of the mandatory examination.

2. In a previous letter of communication from Dr. Robinson, in which the standard deviation was increased 10 - 20%, increasing flexibility in the determination of the enzymes standards, permitting a possible decrease in the cases placed on and maintained on restriction. The file figures have not been tabulated. However, we have now removed 4 individuals from restriction during the past 30 days. It must be remembered as mentioned in the resume' from the Louisville seminar that, the

quality control of the laboratory and/or laboratories doing these enzymes studies must have exact control mechanisms and quality standard controls. + reagen. It has been demonstrated in previous reports that as many as 16% of the control groups can have deviation of standards showing abnormalities, presumably some of these being due to re-agent ~~mecha-~~ defect. ~~nisms.~~ The pathologist at Louisville had made recommendations concerning this problem. These can be noted in Dr. Robinson's resume'.

3. IT IS OF SIGNIFICANT NOTE THAT NONE OF THE BIOPSY SPECIMENS, OF WHICH THERE WERE 3, PRESENTED TO THE PATHOLOGIST AT LOUISVILLE (1 related to a brain tumor, not related to vinyl chloride) BRINGING THE TOTAL TO 4 -- THESE ~~SPECIMENS FAILED TO~~ REVEAL ANY EVIDENCE OF HISTO-PATHOLOGICAL CHANGES COMPATIBLE WITH VINYL CHLORIDE INTOXICATION. It is my understanding that subcapsular necrosis and focal necrosis represent those areas which would be affected and caused by vinyl chloride liver intoxication.
4. We now recommend that the intermediate liver scan be eliminated, and that should an individual show persistently elevated liver enzymes of those related vinyl chloride intoxication, namely LDH-5, alkaline phosphatase (liver), SGOT, GGPT, and SGPT, that is to say following a satisfactory period of restriction that these individuals be r ferred to a gastroenterologist for evaluation at which time the liver

scan can be done. We feel that this would not place any compromise in diagnostic evaluation of the individual.

5. We have now extended that period of time between enzyme studies from 3 to 6 weeks. We feel that the half life of the enzyme, and that although alcoholism and etc. produce elevated enzymes that, this would present no compromise to the individual's health and that the standards as presented by OSHA do not specifically state a requirement of 3 weeks and that a 6-week period is more realistic in awaiting a return to normal of these enzyme studies.

With the above statments we feel that we can now introduce the following conclusions:

1.1 All individuals with persistently elevated enzymes should have a work profile, namely, where and how, and what type of vinyl exposure does he have. (A recent incident involving a Maintenance man which failed to wear a mask because he was outside of the vinyl area, although he was removing valves which were plugged with vinyl and was occasionally exposed to large concentrations. This man had not had a personal monitor at any time.)

1.2 Following initial enzyme studies, ~~should they be~~ in case of elevated, a period of 6 weeks should be allowed to intervene before the repeat enzyme studies are done. 5 alcohol-

1.3 Should the enzymes be elevated on the second study, the individual should be restricted from the vinyl area.

1.4 Following a 6-week period of restriction and a repeat enzyme study, should they be elevated again the individual should then be referred to a gastroenterologist, ~~for instance~~ (Dr. Louis Hargus) for evaluation. At this time the patient's drug profile and alcoholic profile will be ~~interrained~~ obtained. It must be remembered that at all times the individual worker is asked not to ingest alcoholic beverages during his period of observation should any of his abnormalities present themselves in the enzyme study.

1.5 The individual shall be ~~dispositioned~~ dispositioned by the recommendation of the gastroenterologist, and following his work-up as to (1) return to work in the vinyl area or (2) remain on restriction or be (3) removed permanently from the vinyl area.

1.6 The new values will be enclosed in the attached graph showing the standard values resulting from calculation of standard and mean deviation.

In our conversation I also requested a letter of confirmation regarding disposition of individual who donates kidney to his brother for a kidney-transplant operation. Should this individual be returned to the lead area and what work restrictions should be place on him. Pending evaluation and

consultation with a nephrologist, it would be my opinion at this time that no restriction should be placed on the individual.

The lead check program which you are familiar with and which I discussed, will be revised so that individuals with 100 micrograms of lead/urine ~~with less~~ or more on 3 occasions ~~or less~~ will be restored to the lead area should they have been previously restricted.

I would appreciate your comments regarding possibility of selective removal of the showering for lead check, either by virtue of 3 previous consecutive values of less that 100 not requiring showering possibility of individual not showering on coming to work, although this is difficult at this plant. Perhaps, it should be noted that further engineering controls have lessened the lead in the air, and hopefully this trend will continue so that the lead contact with the individual's clothing and skin may not be sufficient to warrant further routine showering previous to lead check. Another suggestion would be that the possibility of the odd numbers not require shower, and should the elevations be over 100 then it would be repeated

I AM ENCLOSING THE LETTER FROM MR. BRUTON WITH REFERENCE TO THE STATISTICAL FIGURES WHICH YOU REQUESTED. We are unable to uncover any cause related to our activities at this plant which would reduced the reduction in spot urine checks.

DICTATED
Encl.

EC 2840

~~cc: Dr. Burdick~~