

INTEROFFICE MEMORANDUM

Date: 12-Dec-1996 02:30pm EDT
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Subject: RE: O.H. Review - Organofluorine Compounds

Ramirez and Reinhardt make a number of recommendations concerning medical surveillance for several biopersistent fluorochemicals, specifically C-8 at Washington Works and TAF and HFPO trimer at Fayetteville Works. In this letter, I list each recommendation (CAPITAL LETTERS) along with what I believe is the appropriate action for this site. I tried to take into account the considerations that were raised in our earlier discussion and also what I learned from talking to Gerry Kennedy.

1) CONTINUE, BUT ENHANCE PRIMARY PREVENTION THROUGH USE OF ENGINEERING CONTROLS AND UTILIZATION OF PERSONAL PROTECTIVE EQUIPMENT.

The site is already committed to this course of action. One of the action points from my May 1996 summary of the 1995 blood study results was to do job reviews and employee interviews in order to identify routes of C-8 exposure that may be better controlled. This analysis has recently been completed, and the results will be used by the BTO in its ongoing efforts to improve C-8 handling. In fact, the job reviews showed a number of instances where the BTO proactively installed engineering controls that should reduce the potential for C-8 exposure.

2) EXPOSURE POTENTIAL AND PROGRAM EFFECTIVENESS SHOULD BE MONITORED BY BOTH AIR SAMPLING AND BIOMONITORING.

We already do this, with routine industrial hygiene air monitoring and with our 5-year blood testing.

3) SKIN EXPOSURE POTENTIAL SHOULD BE ADDRESSED BY APPROPRIATE WIPE SAMPLING AND BIOMONITORING.

We already do the biomonitoring, but wipe sampling has been limited to special studies, such as the one to determine the C-8 exposure from FEP dust. Additional wipe sampling would be a reasonable thing for us to do. If any problem areas are identified, we should make it a part of our routine monitoring.

.....RECOMMEND PRE-ASSIGNMENT AND POST-ASSIGNMENT EXAMINATIONS BE CONDUCTED. WE ALSO RECOMMEND THAT BASELINE EXAMINATIONS BE CONDUCTED ON ALL CURRENT EMPLOYEES WHO HAVE NOT PARTICIPATED IN PREVIOUS SURVEILLANCE CAMPAIGNS. THESE EXAMINATIONS ARE TO INCLUDE: 1) MEDICAL HISTORY QUESTIONNAIRE INCLUDING SMOKING HISTORY. 2) BLOOD TESTS - COMPLETE BLOOD COUNT - SMA-12 - FLUORINE-IN-BLOOD-TEST.

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There are two separate issues here. First, should we force employees to be tested. Second, are the recommended tests appropriate.

Voluntary participation in the 1995 blood study was about 50% of the employees who were contacted. The only way to get 100% participation from the C-8-exposed cohort would be to force these people to submit to invasive medical testing. This will create employee relations issues, and we have to ask ourselves if it is worthwhile to do so. Considering the lack of evidence of a C-8 health problem, and the amount of additional information to be gained, and the low level of employee concern, I think the answer is no.

This brings us to the question of the usefulness of the proposed tests, which seem more appropriate for the chemicals of concern at Fayetteville. In the case of C-8, the target organs are not really known. The data from rodent studies are not applicable to humans, and all epidemiologic work thus far, including liver function studies, has not shown any connection between chronic C-8 exposure and human disease. I would recommend that we postpone any additional medical surveillance until the completion of the planned rhesus monkey toxicology study. This study, using a more appropriate primate test species, should give us a much better idea of what, if anything, to monitor in humans.

WE ALSO RECOMMEND THAT PERMANENT ROSTERS BE ESTABLISHED FOR ORGANOFLUORINE COHORTS. THE FOLLOWING INFORMATION SHOULD BE MAINTAINED FOR EACH COHORT MEMBER: 1) DEMOGRAPHIC INFORMATION - SOCIAL SECURITY NUMBER, BIRTHDATE, SEX, ASD. 2) WORK HISTORY INFORMATION - JOB TITLE, WORK AREA, ENTRANCE AND EXIT DATES. 3) EXPOSURE HISTORY-INDIVIDUAL/JOB/GROUP - AIR MONITORING DATA, BIOMONITORING DATA, WIPE SAMPLING DATA.

We already do this at Washington Works with the help of two computer programs, FLAIR and HYGIENE.

WE RECOMMEND THAT EACH INCIDENT OR EXPOSURE TO ORGANOFLUORINE COMPOUNDS BE ADDRESSED ON A CASE BY CASE BASIS BY A QUALIFIED MEDICAL PROFESSIONAL.

Dr. Power, the Plant Medical Superintendent, routinely reviews each serious safety incident that involves an overexposure to a chemical agent.

WE RECOMMEND THAT MONITORING CONTINUE TO ENSURE EXPOSURES ARE KEPT BELOW THE AEL. PERIODIC APPRAISALS OF THE DATA SHOULD BE DONE TO GUIDE FUTURE OCCUPATIONAL HEALTH EFFORTS CONCERNING ORGANOFLUORINE WORKERS.

This is done as part of our routine industrial hygiene monitoring.

PARTNERSHIP AND EXCHANGE OF INFORMATION WITH 3M OR OTHER MANUFACTURERS SHOULD BE CONTINUED.

In the case of C-8, this is done at the SBU level and by Haskell Laboratory.

CONSIDERATION SHOULD BE GIVEN TO UNDERTAKE A STUDY TO DETERMINE THE BLOOD ELIMINATION RATE OF ORGANOFLUORINE COMPOUNDS.....REVIEW OF WASHINGTON WORKS EMPLOYEES-BLOOD RESULTS SUGGESTS THAT A LARGE ENOUGH POOL OF RETIRED OR TRANSFERRED ORGANOFLUORINE WORKERS IS NOW AVAILABLE FOR TESTING.

This was already done as part of our 1995 blood study. The pool of test subjects is not large enough to be useful for two reasons. First, an initial C-8 blood test must be run very close to the time that exposure stops. This was the case for very few retirees. Second, the limited data we do have

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indicates there is a wide variability in the rate of C-8 elimination, necessitating a large group of test subjects to get a good average result. It is unknown whether this variability is associated with individual metabolism, initial C-8 blood level, or test error.

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