



JUH: ~~JGE~~ TGG: RF

XF: MJC

Interoffice Communication

To J. R. Drumwright, M.D.

From Tom Grumbles

Date January 16, 1984

Subject HASKELL PROPOSAL FOR HEARING PROTECTOR FIELD STUDY

I agree with the opinion of the corporate noise group that the effect of a general reduction in the listed NRR's for hearing protectors would not have a significant effect on Conoco's, and particularly Conoco Chemicals', operations. I do not recommend that Conoco financially support the research request.

Thomas G. Grumbles

ajo

VVV 000012698



RECEIVED

JAN 13 '84

Interoffice Communication

To Steve Szabo & Tom Grumbles
From J. R. Drumwright, M.D.
Date January 12, 1984
Subject HEARING PROTECTOR FIELD PERFORMANCE STUDY

Route: _____

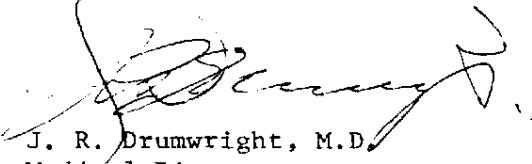
Copy: _____

File: New RepX-F: Corresp.

Haskell Laboratory has proposed a field study to examine the validity of Noise Reduction Ratings of personal protective hearing devices. Conoco has been asked by Haskell to participate in this study. Dr. Riddle has addressed the opinions of the Conoco Noise Group regarding not only the concept of this study, but its potential impact on Conoco operations. His comments as well as copies of the correspondence from DuPont relative to this proposed study are attached for your review.

Dr. Riddle has asked that I provide management of the operating groups, for whom I have responsibility of coordination of medical activities, to review this material and to provide Conoco Medical with a response by January 25, 1984 as to whether or not your group would elect to participate in this proposed study.

Please let me know if I can be of assistance during the interim.



J. R. Drumwright, M.D.
Medical Director
Chemicals Operations &
Corporate Services

kww

CC: C. L. Whetstone, M.D.
J. L. Riddle, Ph.D.
E. L. DeWhitt, Ph.D.

January 12, 1984

VVV 000012699



Interoffice Communication

To D. M. Allen, M.D.
J. R. Drumwright, M.D.

From J. L. Riddle, Ph.D.

Date January 10, 1983

Subject HEARING PROTECTOR FIELD PERFORMANCE STUDY

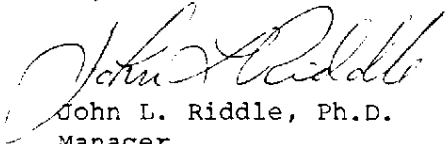
The attached letter from Dr. Karrh (Attachment 1) explains the current concerns about Noise Reduction Ratings (NRR's) of hearing protectors. OSHA is considering cutting NRR values in half.

Haskell Laboratory has proposed a field study (Attachment 2) to examine the validity of NRR's. The hope is that data from the study will show no need to reduce the NRR's.

Haskell has asked Conoco to participate in this study. Conoco's portion of the expense, if we agree to sponsor the work, would be ten thousand dollars (Attachment 3). However, the financial support and the decision to support or not support the project should come from the operating groups not Medical Division. Obviously, the more participants in Conoco, the less each group's cost would be.

It is the opinion of our noise group that the concept of the Du Pont study is good. That is, improper use of hearing protectors is responsible for the low NRR's and not the protector itself. However, reduction of NRR from thirty to fifteen will still allow an employee to work in an area generating one hundred db of noise. Thus, while a study may be of significant value to Du Pont, it is felt that the effect, on Conoco's operations, of OSHA reducing the NRR's by one half will be minimal.

Would you please review the Du Pont request with the management of the operating groups that you serve and let me know their decision by January 25, 1984.



John L. Riddle, Ph.D.
Manager
Health Services
jm

Att: (3)

cc: C. L. Whetstone, M.D.
W. K. Dietrich
J. E. Hertzog (Information copy only)

VVV 000012700



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON, DELAWARE

EMPLOYEE RELATIONS DEPARTMENT

C. F. REINHARDT, M.D.
W. K. DIETRICH
D. A. KUHN
J. M. WESLEY
W. B. WATKINS
V. R. RICE
R. L. RICHARDS, JR.
J. F. McALLISTER
J. G. PAGE, JR.
B. W. CULPEPPER, M.D.

Attachment 1

November 14, 1983

TO: OCCUPATIONAL AND ENVIRONMENTAL HEALTH MANAGERS

FROM: B. W. KARRH, M.D. *BWK*

HEARING PROTECTOR FIELD PERFORMANCE STUDY

Over the past few years at least twelve investigators have studied the performance of hearing protectors in the field. Their findings have seriously questioned the validity of noise reduction ratings (NRR's) as a criterion for hearing protector selection. A closer reading of these studies indicates that these findings are likely due to improper hearing protector use rather than to inherent problems with hearing protectors. Performance of hearing protectors in a comprehensive hearing conservation program, such as ours at Du Pont, should result in better workplace performance.

At least one protector producer, EAR, is advocating an across the board reduction in NRR values by 10dB. OSHA is considering cutting NRR values in half. This would limit the best hearing protectors to about 10dB attenuation. In certain situations this would require implementation of expensive engineering controls to reduce noise levels to within 10dB of the 90dB or 87dB limits in addition to current use of hearing protectors.

Such reductions in NRR's are arbitrary and are likely too stringent for use at sites which have an effective hearing conservation program, such as our program within Du Pont. However, we need to conduct studies to support this with data. I have reviewed the proposed study on the attached MR request, and conclude that it will fill this need. I urge you to approve the MR and provide the funds so that we can obtain data to counter an excessively stringent regulation on hearing protectors which may require installation of unnecessary and expensive engineering controls.

RE: 1

BWK/mws
Enclosure

VVV 000012701

DEC 15 1983

MEDICAL DIV

HEARING PROTECTOR FIELD PERFORMANCE STUDY

A study will be conducted to evaluate the degree of protection provided by hearing protectors as they are used in a comprehensive hearing conservation program at a Du Pont site. Specifically, this study will address how noise reduction ratings (NRR's) and hearing protector fit tests (difference between audiograms) should be interpreted and used in our programs. The study will be done in two parts.

First a pilot study will be done to evaluate the study methods. The basic study approach will be to determine workplace attenuation of hearing protectors by conducting random audiograms with earplugs in place (as they are being worn in the workplace) and without ear plugs. Two methods will be investigated for conducting difference audiograms, the diffuse field (ANSI) method and a method using a ear muff/head phone device developed for NIOSH by Pennsylvania State University. Evaluation for accuracy and precision will be done to choose the best method for use in the full study. The distribution of the difference between audiograms will be determined and proper statistical design developed. In addition, a thorough literature review will be performed on prior studies on hearing protectors to benefit from their methodological successes and mistakes.

Based on the experience gained and the results from the pilot study a detailed written protocol will be developed for the full study. It will be peer reviewed by at least two expert consultants. Study sites and specific hearing protectors to be studied will be selected with the concurrence of the Ad Hoc Hearing Conservation Committee. The study will consist of the following basic parts.

- Audiograms will be randomly performed on persons using hearing protectors, as they are being used in the field, to determine their performance versus NRR values.
- The site's training program will be documented and historical hearing protector fit test difference audiograms will be obtained for comparison with hearing protector field performance. This will enable evaluation of hearing protection fit test criteria.
- Noise measurements will be made to document ambient noise levels. Octave band sound levels and A scale weighted sound levels will be determined. Hearing protector field performance will be compared with ambient noise levels to determine whether attenuation increases with increasing noise levels.

The study has been planned and will be conducted in part by an ad hoc committee of the Hearing Conservation Committee, consisting of R. N. Ligo (Chairman), R. E. Atkinson, T. A. Dear, S. W. Dixon, T. J. Nelson, S. Pell and H. A. Smith.

VVV 000012703

SWD/dar
November 28, 1963

CENTRAL RESEARCH & DEVELOPMENT DEPARTMENT
HASKELL LABORATORY FOR TOXICOLOGY AND INDUSTRIAL MEDICINE

DATE November 28, 1983

TO: C. L. WHETSTONE, M.D.
CONOCO
PONCA CITY, OK

PROJECT MR-7076 PART I

TITLE: HEARING PROTECTOR FIELD PERFORMANCE STUDY

Authority is requested to undertake the study identified above and described as follows:

See attached description.

.....
Amount requested \$10,000 Forecast month and year: _____
Previously authorized \$ _____ Experiment to start 11/1/83
Expended through \$ _____ Experiment to end 6/1/84
(date) Final report to issue 7/1/84
General Ledger & Sub-Account to be Request for study made by _____
charged _____

CLASSIFIED: R&D OTHER
(check appropriate classification)

.....
If this request meets with your approval, please enter the GENERAL LEDGER & SUB-ACCOUNT TO BE CHARGED and the CLASSIFICATION, have the original authorized and return to HASKELL LABORATORY, CONTROL SECTION. The additional copies may be retained for your information and distribution.

Proposed by Stephen W. D. [Signature]

Approved by Frank A. B. [Signature]

Authorized _____
(date)