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FOLDER LUSHBAUGH MEXICAN ACCIDENT
COBALT-60



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OAK RIDGE ASSOCIATED UNIVERSITIES
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FTS 626-3643
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DATE: March 29, 1985

FROM: C. C. Lushbaugh DIV MHSD FTS 626-3086
(PRINT) TEL.

TO: James S. Robertson, M.D. ORGANIZATION Director, Human Health & Asses. I
(PRINT) (PRINT)
U.S.D.O.E.

OFFICE/LOCATION ER-73 FTS 233-5355
TEL.

FAX NO., IF KNOWN: FTS 233-3870 Verification # FTS 233-3486

THIS TRANSMITTAL CONSISTS OF 6 PAGES, EXCLUDING COVER SHEET.

APPROVED: Billie Ryan

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Health Sciences
Division

March 28, 1985

James S. Robertson, M.D.
Director of Human Health and
Assessment Division
U.S. Department of Energy (GTN)
ER-73
Washington, DC 20545

Dear Jim:

We at last have heard that the Mexican government wants us to continue the Juarez accident investigation. I was asked to submit a new condensed proposal and set up a U.S. oversight committee with PAHO and EPA to work with the Mexican officials. I'm thermo-faxing a copy of this proposal to you and would like you to pass a copy on to Bob Goldsmith. I foresee that the first real step will be for me to go to Juarez and obtain blood samples again since an old venapuncturer will be needed. Perhaps you would like to volunteer?

Yours,

C. C. Lushbaugh, Ph.D., M.D.
Chief, Radiation Medicine

CC:lw

Enclosure

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Oak Ridge
Associated Universities Post Office Box 117
Oak Ridge, Tennessee 37831-0117

World Health Organization
Health Sciences
Division

March 28, 1985

Dr. Felipe Hurtado
Asesor del Director General.
Dirección General de Investigación de
Efectos Del Ambiente en la Salud-S.S.A.
Boulevard A. Camacho No. 164, 9o. Pisc
Col. Lomas de Chapultepec
011000 México, D.F.

Tel. (905) 250-9800

Dear Doctor Hurtado:

I would like to report to you my progress in making plans to assist you in the continuing investigation of the Juarez radiation accident.

1. The mechanism is in place for your organization to petition for scientific and medical assistance through the Pan American World Health Organization field office in El Paso which is under the direction of Dr. Herbert Ortega.
2. Dr. Herbert Ortega has agreed to head an oversight committee to coordinate the efforts of the U.S. scientists who will be involved with their opposite colleagues in your country and with your office.
3. Dr. Peter Voytek (EPA) and Dr. C. C. Lushbaugh (ORAU/DOE) will be the other two members of this committee for steering U.S. collaboration with your scientists, for keeping you informed of the results of any studies and for seeing to it that all scientific reports are coordinated with your office and staff. This committee would also see to it that there is acceptable acknowledgement of collaboration with your scientists.
4. At present we have only two projects to propose to you:
 - A. First, we propose that Dr. Littlefield and her cytogenetic staff at REAC/TS (ORAU/DOE/OAK RIDGE USA) be authorized under me to repeat the chromosome studies on the 10 Juarez residents that were studied initially by her and Dr. Karl Hübner.

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Dr. Hurtado

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March 28, 1985

- B. Secondly, we propose a study by Mr. Zolin Burson of EG&G Measurements (Las Vegas DOE operations) to refine existing knowledge related to the truck that was parked on Aldama St.

Specifically, Mr. Burson would work with Mr. Molina (Area Chief for Nuclear Fuel Cycle Radiation Protection, Insurgentes Sur 1806 Mexico, D.F.) to refine the effective source strength estimates for the pick up truck; calculate the integrated exposure in the first row of houses on both sides of the street using actual structural components; assign preliminary doses with uncertainties for selected residents of Aldama Street who must be identified from a roster of these people which includes their time of stay in each house along both sides of the street. It is my understanding that Dr. Rafael Olachea, Director, Centro de Salud "A", S.S.A., Juarez has indicated his willingness to coordinate the task of identifying the residents.

Should it prove that some dose assignments that result from these studies are clinically significant and a cause for worry, we would then propose to you an additional study to do a TLD study of fired bricks and ceramics in that area. We do not think such an experiment is warranted at this time.

I enclose with this letter proposal to you a copy of Mr. Burson's 23 January 1985 letter to Dr. Olachea which also outlines some needed data for Mr. Burson to carry out his study.

You also need to know that the EPA investigators under Dr. Voytek do not have a specific research proposal to submit at this time. Drs. Voytek, Albertini and Selevan will observe our progress in these studies and, depending upon our results, may wish to submit additional proposals in the future. They are prepared, however, to consider any requests you or your staff may wish to make of them.

In summary, we submit here for your consideration two basic proposals: one on cytogenetics and one on dosimetry. If you can authorize these studies, we will make arrangements for our participation through the PAHO El Paso field office and your office.

Should your scientists and physicians require further assistance in other aspects of this study, please inform us of your need.

Yours,



Dr. C. C. Lushbaugh, Ph.D., M.D.
Chief, Radiation Medicine

CCL:VLL

Enclosure

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**EG&G ENERGY MEASUREMENTS****Las Vegas Area Operations**

EG&G ENERGY MEASUREMENTS, INC. P.O. BOX 1912, LAS VEGAS, NEVADA 89125

TEL (702)

23 January 1985
NRD-85-016

Dr. Rafael Olachea S.
Director, Centro de Salud "A", S.S.A.
Jose Marti y Paseo Hidalgo
Cd. Juárez, Chihuahua
Mexico

Dear Dr. Olachea:

During the Pan American Health Organization (PAHO) meeting in El Paso on January 9, 1985, you ask me to send you in writing my recommendations related to my presentation.

Attached to this letter is a copy of my prepared comments and illustrations in case you did not obtain a copy during the meeting.

There are two facts that I learned at the meeting that changes the results of the attached paper.

First, the truck was parked at position B for six weeks, not seven weeks. This reduces the integrated exposure by 15 percent.

Second, the houses along Aldama Street are constructed of 30 cm adobe walls. The attenuation factor for cobalt-60 gamma rays penetrating a 30 cm adobe wall would be about 0.15. This means the 175 R contour would be reduced to about 20 R in the area of the houses (illustration #7) after also considering 6 weeks instead of 7 weeks. In illustration #8, if the cinder block wall were replaced by a 30 cm adobe wall, the integrated exposure would be reduced from 1200 R to about 150 R (also considering the reduction of time). The implication is that the exposure inside the houses on the east side of the street could be between 20 and 150 R.

As a next step in considering a possible medical follow-up, I would recommend a refinement of existing knowledge related to the truck being parked on Aldama Street. Specifically I recommend the following:

1. Estimate the number of people and time of stay in each room in each house along both sides of the street.
2. Refine the effective source strength in the pickup.

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3. Calculate the integrated exposure in the first row of houses on both sides of the street using actual structural components.
4. Assign preliminary doses with uncertainties.
5. If dose assignments are significant, do a TLD study of bricks and ceramics to refine the dose assignments.
6. If uncertainties are still high and dose assignments are significant, do a mock-up experiment.

I would like to do some preliminary calculations of exposure inside the houses. In order to do this I need some information that, perhaps, you could provide. The information I need is as follows:

1. The width of the street between the curbs.
2. The distance from the curb to the outside wall of the houses on both sides of the street.
3. The distances between the two parking locations of the pickup and the distances to the ends of the street.
4. The thickness and material of each wall of each house (end and side) and their location along the street in relation to the location of the pickup.
5. The thickness and material of the roofs.
6. A sketch drawing of each house showing location of doors, windows and inside partitions.
7. The thickness and material of inside partitions.

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Dr. Rafael Olachea S.
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Thank you for allowing me to give you my recommendations and thank you for considering my requests

Sincerely,


Zolin Burson
Scientific Specialist

ZB:em
Attachment

cc: Dr. C. Lushbaugh, ORAU
J.K. Magruder, DOE/NV
Dr. Gustavo Molina

bcc: J. Doyle
H. Lamonds
G. Sasso
T. Stuart
J. Tipton

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