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BNL MEMO

Date: November 6, 1992

To: R. Jones (DOE)
From: E. Kaplan *EK*
Subject: Proposed areas of cooperation between CIEMAT and BNL

The following proposed areas of mutual interest and cooperation were prepared by and agreed to by José Gutiérrez, Emilio Iranzo, Emma Iranzo, and Asunción Espinosa (CIEMAT), and by Ed Kaplan (BNL) at the joint Dose Assessment Meeting held on November 2-4, 1992:

1. It has been suggested that normalization of reported ^{239}Pu activities (i.e., from FTA) be performed on the basis of creatinine (a protein breakdown product found in urine), as opposed to the present scaling by mass and volume used by BNL. CIEMAT (Espinosa) will send relevant information (as soon as possible) to BNL (Kaplan) for evaluation. Technical discussions will follow during the next several months. [Dec'92 - Feb'93]
2. Potential improvements exist in the methodologies used for dose assessment. These include such areas as the types and applications of relevant models, model sensitivities, parameter values, etc. An exchange of information will proceed to address these items. In particular, BNL and CIEMAT will first focus on one or two example calculations. Additional information and technical exchanges will follow as necessary. The review of parameters by various laboratory/animal experiments is now in process at CIEMAT, the first results of which will not be available for at least one year. [Dec'92 - June '93]
3. Several areas of cooperation were agreed to with respect to the fission track analysis methodology.
 - (a) CIEMAT expects to collect its next set of urine samples during the first week of December '92. Several samples (e.g. 5-6) will be split and analyzed for ^{239}Pu at both BNL and CIEMAT. Samples will be selected on the basis of volume (e.g., at least 500 mL in each split) and on expected activity (e.g., individuals whose urine ^{239}Pu activities are believed to be less than 1 fCi). It is hoped that on the basis of these selection criteria (and others to be established as necessary), that some samples will have activities above CIEMAT's MDLs such that comparisons with BNL's FTA results will be possible. CIEMAT will endeavor to send these samples as quickly as possible to allow BNL to process them before its upcoming mission to the RMI circa February '93. BNL will send a urine collection protocol to A. Espinosa as soon as possible.
 - (b) An important scientific question concerns the variation in daily excretion of ^{239}Pu in urine (and feces). It was agreed that CIEMAT will select two individuals from whom urine samples will be collected during successive 24-hr periods (e.g., 4-5 days). These samples will be split as described above and sent to BNL for processing by FTA.

BNL will endeavor to collect similar consecutive-day samples from individuals during its '93 missions to the Marshall Islands. Volunteers will be sought whose urinary ^{239}Pu activities have been found above MDLs during most recent field missions.

Analyses of the FTA results will be made jointly by BNL and CIEMAT and discussed during technical meetings at CIEMAT during August-September '93.

- (c) CIEMAT will send one staff member (e.g., A. Espinosa) to BNL for approximately two weeks during the period April-June '93. The purpose will be to become sufficiently familiar with FTA chemical and counting procedures such that they can be duplicated at CIEMAT. During June-July '93 CIEMAT will prepare several urine samples for irradiation at BNL (BNL will supply firepolished quartz substrates for this purpose). Counting will be performed at both BNL and CIEMAT.**

A meeting will be held at CIEMAT during August-September '93 to evaluate the procedures and analytical apparatus used at CIEMAT, as well as the results of FTA analyses of these test samples. It is anticipated that it will be possible for CIEMAT to proceed to prepare larger numbers of urine samples for irradiation at BNL during the following months. Evaluations of results will be performed via phone/fax, and at a site visit (e.g., BNL or CIEMAT) at the end of 1993, during which time plans will be made for continuing cooperative efforts during subsequent years.

ASIDE: Additional funds will be required by BNL for sample analyses and travel. CIEMAT will also require additional funding to send a staff member to BNL for a 2 week period, for laboratory analytical equipment required for FTA, and to sponsor/support two technical meetings during 1993 (July-August and December).

**cc: J. Baum
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