FW 4/11/53

356

Notes on Tripartite Conference, March 30-April 1.

The following notes are mostly from memory. In view of the fact that a stenographic record was taken, I did not anticipate the need of detailed notes. In some cases the statements may be unreliable.

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March 30.

A.1. Some discussion of "rep" but no recommendations as to size or name.

2. There were some revisions in the "standard man" but I made no record of details.

3. Failla presented certain recommendations given in the draft of the report of the NCRP Sub-committee on External Dose. As I recall, the action was approximately as follows:

a. The recommendation that the permissible dose for persons over 45 years of age was discussed and strongly opposed by Morgan and, I believe, Marley. No action.

I believe that the recommended differential factor of 10 between children and adults was adopted.

b. I believe that Failla's recommendations for maximum permissible dose to local areas were accepted. These are:

For hands and forearms, feet and ankles, or head and neck, for any ionizing radiation, 1500 millirems to the skin provided that the dose to any other tissue shall not exceed that which would result in exposure of the skin to 1500 mr of ordinary x-rays, and provided that the exposure to the eyes shall not exceed 450 mr/week for ordinary x-rays nor 300 millirems per week for ionizing particles.

The currently accepted value of 10 for the r.b.e. of protons was reconfirmed for specific application to the lens of the eye (protection against radiation cataracts). Discussion indicated that the value could be much less for other applications but I recall no acton on this point. The following maximum permissible values of incident neutron flux, interpolated from the results of the calculations of Mitchell, Snyder, and possibly others, based on an r.b.e. of 10, were adopted:

Energy (Mev)	10	5	2	1	0.5	0.1	0.01	Thermal
Flux ($cm^{-2}sec^{-1}$)	30	30	40	60	80	200	1,000	2,000
	15	15		65	90			1800

Tri-partite NCRP (?)

These are average fluxes for a 40 hour week.

A uniform value of one for the r.b.e. of betas and recoil electrons was reconfirmed although it was noted that this probably represents an over simplification.

After apparent unanimous agreement that the r.b.e. of alpha particles for known effects in the body appears to be less than 5, insistence of some two or three persons for a more "conservative" value of 10 prevailed (?).

A.5. I recall no definite action on genetic considerations.

6. I believe it was agreed to recommend limitation of dose to large populations by a factor of ten (?). This may be confused with B.6. March 31, ~~XXXX~~ below, since I cannot recall two separate discussions on the subject.

7. No agreement was reached on length of time for averaging dose. The British were more conservative than the Americans, partly from administrative considerations and partly from the feel by Mitchell that a system of averaging dose should include a six-months period of recovery.

B. Except as included in the above notes, I recall no discussion on these items.

March 31.

A. To conserve time, the first 5 items were passed over. However, item 5 came up for discussion later in connection with discussions of inhalation of uranium and thorium. It was agreed that the retention figure for insoluble dusts should be lowered from 25% to 10%. I do not recall the convention adopted for the disposition of the remaining 90%.

6. I believe it was agreed that a factor of 10 should be applied in reducing maximum permissible levels of internal dose to levels satisfactory for large populations. See A.6., March 30.

7. Possible effects of iodine on sheep were discussed and data presented by Healy. Marley was particularly concerned over the possibility of damage to local grazing animals. Dr. Warren presented data from effects of iodine on human euthyroids to indicate that the thinking of Hanford and the English on this subject is ultraconservative. Both seemed to feel that consideration of deposition on vegetation presented a more stringent limitation on air concentrations by a factor of more than 1,000 than does inhalation by humans.

B. 1. Radium was discussed but no changes in current values were recommended. Levles of radonm in air higher by a factor of 10 (?) than those currently accepted were recommended. I believe that these may be interpreted as radon in equilibrium with its decay products. (This will be a boon to the AEC and PHS in connection with the uranium mines.)

2. The maximum permissible body content for polonium was raised to 0.02 (?) uc. The British had been unable to reconcile data given by Fink, MMES VI-3, with ~~XXXXXXXXXXXXXX~~ biochemical data used by Morgan in computing maximum permissible levels in air and water, and no action was taken on these (?).

3. ~~XXXXXX~~ Actinium, maximum body content, 0.02 uc. (?)

4. Thorium, maximum concentration in air same as for uranium.

B.5. Plutonium. Studies of 15 cases of injections were reviewed by Langham. Urinary excretion was surprisingly uniform from one case to another and from one day to another. Excretion rates: at 1 day, 0.8%; 5 days, 0.3%; 9 mos, 0.003%, 1260 days, 0.001%, fitting equation

$$y_u = 0.23\ x^{-0.77}.$$ Versene increases rate by 10 to 50x.

British discussed a case in which there is some evidence that as much as 50 mg was swallowed.

I recall no action on present values.

6. ??

7. The MPC of $C^{14}O_2$ in air was increased by a factor of 10 (?) to 1×10^{-5} uc/cc on statement by Brues that less than 10% (?) of C^{14} in inhaled CO_2 enters into metabolization. There may have bee other action on C-14 which I do not recall.

8. The MPC of H^3HO in the atmosphere was reduced by a factor of 2 on the basis of Pinson's observation that the body absorbs as much through the skin as through the lungs.

April 1.

C. Failla's recommendations on accidental exposure were discussed extensively. The British were strongly opposed to his concept of radiation status unchanged by accidental exposures over maximum permissible levels. No agreement.

The British position was based largely on administrative considerations.

Also factors of 5 for Ca + Ba and 12.5 for other bone seeking beta emitters