CHERNOBYL CAUSED OVER 1,000,000 MALIGNANCIES IN EUROPE AND SOVIET UNION COMBINED, ACCORDING TO EXPERT WHO EXPLAINS DETAILS OF HIS ANALYSIS

The health consequences of the Chernobyl nuclear power accident, in terms of cancer and leukemia cases, will exceed 1,000,000 malignancies, according to Dr. John W. Gofman, Professor Emeritus of Medical Physics at the University of California, Berkeley, who is presenting his assessment at the national meeting of the American Chemical Society, September 9th, in Anaheim California.

Dr. Gofman's paper explains exactly why the recent Soviet estimate of fatal malignancies within the USSR from the accident is over 20 times too low. He will discuss this and his other findings at a press conference arranged by the A.C.S. at 8:00 a.m. that morning.

"The number of 1,000,000 malignancies is staggering," says Dr. Gofman, "but it is actually a reasonable value for the consequences because I have excluded the doses from all radionuclides except the cesiums, I have incorporated a very low value compared with the Soviet's own figure for the reactor's initial inventory of cesium, and I have omitted almost all the thyroid malignancies." Thyroid cancers are markedly less life-threatening than other types of cancer.

"Assessment of over 1,000,000 malignancies from a single event means the Chernobyl tragedy is by far the largest accident in history," comments Dr. Gofman. The country-by-country distribution of the malignancies is shown in Table 6 (attached) from Dr. Gofman's 57-page paper for the Symposium on Low-Level Radiation, A.C.S. Division of Chemical Health and Safety. The paper shows in detail how he arrived at the number.

Of even more general importance, because of its implications for all medical X-rays and occupational exposures, is Dr. Gofman's proof that there cannot exist a safe "threshold dose" of ionizing radiation with respect to human cancer-induction, and his demonstration that the risk from very low doses cannot be exaggerated by calculations using direct proportionality between dose and risk. Up until now, it has been stated by groups like the N.A.S. Committee on the Biological Effects of Ionizing Radiation (BEIR-3) that no such proof existed for the non-existence of a safe "threshold dose."

"The non-existence of a safe dose has now been demonstrated by combining the physics of ionizing radiation with five well-reputed human studies which are showing radiation-induced cancer observed at the lowest conceivable dose-rate," says Dr. Gofman, who is presenting the evidence in Section 2 of his September 9th paper. "But no one, including myself, had previously realized that the doses in all those studies are the lowest conceivable doses, biologically."

In answer to the questions "why do experts disagree" about the magnitude of the cancer-effect from a given dose and "why is the Soviet estimate of malignancies wrong," Dr. Gofman is showing in Section 3 of his paper that the various risk-estimates can all be reconciled. He includes estimates from UNSCEAR (United Nations), the BEIR-3 Committee, the separate one by its Chairman, the National Institutes of Health, and from his own book, Radiation and Human Health (1981).

"There is no mystery anymore about what causes the apparent differences and where the mainstream is flowing," says Dr. Gofman. "The N.I.H. today is using a risk-value 1.9 times higher than my own for thyroid cancer, and only 3.5 times lower for breast cancer. We are in the same ballpark. There are just no true 22-fold or 37-fold scientific differences today."

1,000,000 Malignancies From Chernobyl
Also: First Proof Of No Safe Radiation Dose

Table 6:

Cancer and Leukemia Tolls From the Chernobyl Nuclear Power Plant Accident
(Based Upon Dose Commitments In Millirads From Cesium-137 Plus Cesium-134)

Country or Region	Population	Method (see text)	Corresponding To Deposition Of 1,990,000 Curies Of Cesium-137				Corresponding To Deposition Of 1,330,000 Curies Of Cesium-137			
			Dose Commit. mrads	Fatal Cancers	Addit'l Non-fatal Cancers	Leuke-mias	Dose Commit. mrads	Fatal Cancers	Addit'l Non-fatal Cancers	Leuke-mias
Albania	2,500,000	(2)	12	110	110	5	8	73	73	3
Austria	7,600,000	(2)	174	4,900	4,900	200	116	3,300	3,300	135
Belgium	10,000,000	(1)	2	75	75	3	1.3	50	50	2
Bulgaria	8,600,000	(2)	172	5,500	5,500	225	115	3,700	3,700	150
Canada	22,125,000	(3)	0.4	33	33	1	0.3	22	22	1
*Czechosl.	15,500,000	(2)	52	3,000	3,000	125	35	2,000	2,000	83
Denmark	5,100,000	(1)	15	280	280	12	10	190	190	8
**Finland	4,800,000	(2)	249	4,450	4,450	180	166	3,000	3,000	120
France	54,540,000	(2)	58	11,800	11,800	480	39	7,900	7,900	320
Germany,W	61,400,000	(2)	172	39,400	39,400	1,600	115	26,300	26,300	1,100
Germany,E	17,100,000	(2)	201	12,800	12,800	530	134	8,600	8,600	350
Greece	9,700,000	(1)	3	110	110	5	2	72	72	3
Hungary	10,600,000	(2)	41	1,620	1,620	65	27	1,080	1,080	43
Ireland	3,100,000	(2)	1.3	15	15	1	0.9	10	10	0
*Italy	56,200,000	(3)	29	6,100	6,100	250	17	4,000	4,000	165
*Japan	119,500,000	(3)	0.8	360	360	15	0.5	240	240	10
S.Korea	33,900,000	(3)	0.6	75	75	3	0.4	50	50	2
Luxemb'rg	350,000	(2)	12	16	16	1	8	11	11	0
Nether'ds	14,400,000	(2)	12	640	640	26	8	430	430	17
Norway	4,130,000	(1)	86	1,300	1,300	55	57	880	880	37
***Poland	36,900,000	(2)	259	35,700	35,700	1,470	173	23,800	23,800	980
Romania	22,900,000	(2)	770	66,000	66,000	2,700	513	44,000	44,000	1,800
Spain	38,200,000	(2)	2.6	370	370	15	1.7	250	250	10
***Sweden	8,300,000	(1)	496	15,400	15,400	630	331	10,200	10,200	420
Switzer'd	6,500,000	(2)	236	5,700	5,700	240	157	3,800	3,800	160
Turkey	48,000,000	(2)	100	18,000	18,000	740	67	12,000	12,000	490
United K.	56,000,000	(2)	65	13,600	13,600	560	43	9,100	9,100	370
U.S.A.	235,000,000	(3)	0.05	44	44	2	0.03	29	29	1
*U.S.S.R.										
Ukraine	50,700,000	(2)	936	177,000	177,000	7,300	624	118,000	118,000	4,900
Byelor'a	9,900,000	(2)	714	26,400	26,400	1,100	476	17,600	17,600	730
Moldavia	4,080,000	(2)	125	1,900	1,900	80	83	1,300	1,300	55
Baltic R.	7,660,000	(2)	104	3,000	3,000	120	69	2,000	2,000	80
Moscow	8,400,000	(2)	40	1,250	1,250	50	27	830	830	35
Lening'd	4,700,000	(2)	148	2,600	2,600	110	100	1,700	1,700	75
Yugoslav.	23,000,000	(2)	185	15,900	15,900	650	123	10,600	10,600	430
Sum (all countries) (Rounded off)				475,500	475,500	19,500		317,100	317,100	13,100
Total Malignancies = 970,500							Total Malignancies = 647,300			

*Czechoslovakia, Italy, Japan, USSR: The values in Table 6 are probably too low; details in Technical Appendix 2-A.
  We have no data for the area close to Chernobyl, and none for the Russian SSR except for Moscow and Leningrad.
**Finland: There have been serious inconsistencies in the Finnish data; details in Technical Appendix 2-A.
***Poland and Sweden:
  Poland reported extremely high gamma-dose rates in Warsaw during the early days of the accident, but these values
  were later deleted from EPA reports as "too high" without any explanation (compare EPA reports of May 12 and 14 with
  the EPA report of June 4, 1986).
  Sweden reported extremely high gamma measurements in Uppsala for April 29, but these high values simply
  disappeared from later reports without explanation (compare EPA reports of May 8 and 9 with EPA reports of May 12 and
  thereafter).
  In epidemiological science, authorities cannot select only high measurements for checking; unless low measurements
  are checked for error with exactly the same amount of diligence, the net result is to create a bias toward lowering
  a whole set of measurements. Such practice is not acceptable in science.

August 22, 1986: The Soviets are estimating 1,000,000 curies of cesium-137 deposition
within their own european regions [65] . Table 6 matches extremely well with the Soviet value.
The higher estimate of dose and malignancies corresponds with cesium-137 deposition of
991,874 curies in european regions of the Soviet Union; see Technical Appendix 2-B. The
lower estimate in Table 6 corresponds with 2/3 of that value, or 661,458 curies.