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Director  
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May 14, 1986

Edward L Jordan, Director  
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US Nuclear Regulatory Commission  
Washington, DC 20555

CONSUMERS POWER COMPANY - RESPONSE TO IE INFORMATION NOTICE 86-32, "REQUEST FOR COLLECTION OF LICENSEE RADIOACTIVITY MEASUREMENTS ATTRIBUTED TO THE CHERNOBYL NUCLEAR PLANT ACCIDENT."

This letter is to notify the NRC of Consumers Power Company's intention to report any anomalous environmental radioactivity measurements made at our Palisades and Big Rock Point Plants that can reasonably be assumed to have resulted from the Soviet nuclear power plant (Chernobyl) event. This letter also provides specific data that we obtained from performing measurements of members of a Michigan tour group which visited the region of the Chernobyl Plant shortly after the event occurred. The normal environmental monitoring program (EMP) at our Palisades and Big Rock Point Plants has been augmented, as of May 5 and 8, 1986 respectively, to include the collection and analysis of air samples from the immediate plant site. No anomalous results from the normal EMP measurements made at both plants have been noted to date. The augmented air monitoring activities at the Big Rock Point Plant have not indicated any abnormal results and will most likely be terminated at the end of the week of May 12, 1986. The augmented air sampling conducted at the Palisades Plant has, however, yielded increased iodine-131 measurements (I-131 is not normally detected). While these results are clearly due to the Chernobyl event, the levels are so low as to not cause any health hazard to Plant site employees. This information is presented below in the format specified by Information Notice 86-32.

1. Sample date(s) and location: a) May 9, 1986 @ 2145 through May 12, 1986 @ 2145; Palisades Plant site  
b) May 12, 1986 @ 2145 through May 13, 1986 @ 2145; Palisades Plant site
2. Medium or pathway: air charcoal
3. Type of analysis: gamma spectroscopy

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4. Statistical data: (I-131 concentration)
- a)  $3.88\text{E-}4\text{nCi/m}^3$ ; 1 sigma= $\pm 0.60\text{E-}4\text{nCi/m}^3$ ; one sample
  - b)  $8.16\text{E-}4\text{nCi/m}^3$ ; 1 sigma= $\pm 1.63\text{E-}4\text{nCi/m}^3$ ; one sample

Wholebody counts were performed at our Palisades Plant on members of a Michigan tour group known to have visited the Kiev, USSR, area following the Chernobyl event. (This group was in the Kiev area from the early morning of April 30, 1986 through noon of May 2, 1986.) Spectral analyses (gamma) of contaminated personal items were also carried out on May 7, 1986, and both measurements indicate the presence of a wide distribution of fission products. The NRC was notified on May 7, 1986, in accordance with 10CFR50.72(b)(vi), that these measurements were made and that some internal and external radioactive contamination was found. The attached tables provide a summary of these measurements.

Table I gives a typical wholebody count result, and Table II gives very similar results for a particular personal item (a contaminated purse). We have concluded that the data for the purse differs from the wholebody count results for at least two reasons: 1) the purse was counted with laboratory equipment able to identify a larger number of nuclides, and 2) biological elimination resulted in the purse retaining more of its initial activity than the individuals themselves. Table III is a list of personal items from the tour group that were checked for radioactive contamination. The highest contaminated items were disposed, in accordance with the owners' requests, as Plant radioactive waste. None of the personal items, with the possible exception of the shoes which were contaminated to such a level as to yield a 32 mrad/hr beta dose, posed any potential hazard to the owners. Accordingly, Consumers Power Company health physicists concluded that radiation doses to the lungs and thyroids of the exposed individuals are not medically significant.

Consumers Power Company continues to make wholebody counting services available to individuals determined to have been contaminated or otherwise significantly exposed to radiation from the Chernobyl event. This is being accomplished by referral from hospitals or the Radiological Health Section of the Department of Public Health of the State of Michigan after screening by professionals employed by these organizations. Consumers Power Company has also volunteered to provide an additional wholebody count for any of the tour group members who chose to return within a week. These additional counts should allow us to make a better estimation of the body burden at the time of exposure, ie, the period while these individuals were in Kiev.

*Kenneth W. Berry*

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cc: Director, Nuclear Reactor Regulation, US NRC  
Administrator, Region III, US NRC  
NRC Resident Inspector, Palisades/Big Rock Point

TABLE 1

## TYPICAL WMU KIEV TOURIST

Time of Exposure 0001 April 30 to 1200 May 2  
 Time of Whole Body Count ~ 10 AM May 7

Isotope	Nanocuries	% Max Permissible Body Burden	Mrem Exposure
Barium 140	40 ± 5 nCi	6.7%	49 (Lung)
Iodine 131	98 ± 22 nCi	14.0%	625 (Thyroid)
Iodine 132	38 ± 18 nCi	12.7%	2 (Thyroid)
Zirconium 95	21 ± 13 nCi	1.3%	34 (Lung)
Cesium 137	36 ± 29 nCi	0.1%	2 (Whole Body)
Cesium 134	19 ± 11 nCi	0.1%	2 (Whole Body)
Ruthenium 103	43 ± 11 nCi	1.4%	103 (Lung)
Tellurium 132	56 ± 24 nCi	1.8%	33 (Lung)

NOTE: Does not account for the decay or biological elimination of radioactive material between the time of exposure and the time of the Whole Body Count.

NOTE: This data accounts for material inhaled or injected into the body. It does not account for direct exposure to individuals in the radioactive cloud.

TABLE II

## ISOTOPES DETECTED ON CONTAMINATED PURSE

<u>Nuclide</u>	<u>Half-Life</u>	<u>uCi/Unit</u>	<u>Percent of Total (at Time of Count)</u>
Xe-133	5.29D	9.016E-4	1*
Mo-99	66.69H	3.388E-4	0.4
Zr-95	65.50D	6.515E-3	7
Np-239	2.35D	1.668E-3	2
Tc-99m	6.03H	3.945E-4	0.5
Nb-95	35.10D	8.700E-3	10
I-131	8.04H	2.440E-2	29
I-132	2.28H	3.611E-3	5
Ru-103	39.60D	8.251E-3	10
Cs-134	2.06Y	8.479E-4	1
Cs-137	30.17Y	1.456E-3	2
Ba-140	12.79D	6.859E-3	8
La-140	40.22H	6.956E-3	8
Ce-144	284.20D	4.485E-3	5
Te-132	78.00H	3.416E-3	4
Ce-141	32.50D	5.280E-3	6

\*Single Peak Identification

TABLE III

## ITEMS CHECKED FOR CONTAMINATION

<u>ITEM</u>	<u>COUNTS/MIN</u>
Sweater	3000
Belt	200
Wooden Items	100
Watch Band	600
Paper Flowers	8000
Purse (Bag)	3500
Shoes	3000
Tennis Shoes	9000
Hand Bag	5000
Wallet	100
Sewing	300
Shoes	5000
Wooden Items	100
Pictures	less than 100
Coins	less than 100
Water	less than 100
Misc. Knick knacks	100
Coat	less than 100
Paper Flowers	5000
Camera	5000
Camera Strap	3800
Wallet	2000
Comb	300
Coin Purse	700
Watch	2000
Glasses	300
Belt	100
Blue Shoes	4000
Blue Purse	2500
Blue Shoes (Gold Buckles)	50,000
Gray Purse	1000
Black Heels	2000
Beige Shoes	38,000