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Cook Nuclear Plant
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Bridgman, MI 49106
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United States Nuclear Regulatory Commission
Document Control Desk
Rockville, Maryland 20852

January 8, 1996

Subject: Special Report: Loss of Radiological Environmental
Monitoring Program Indicator Milk Farms

As of 1/1/96, two of the three radiological environmental monitoring milk sampling indicator farms indicated that they will no longer be participating in the program. An indicator farm is defined as one within an eight mile radius of the plant. Reasons cited by the farmers for not continuing participation included health problems and work that the farmer doesn't want to be involved with any longer.

On 12/26/95, the Shuler Farm indicated that they would no longer participate after the end of the year. On 12/22/95, the Warmbein Farm did not have milk available for collection. When questioned about this, the farmer explained that health problems prevented him from milking his herd and that he would no longer be participating in the milk sampling program. This prompted a special milk farm survey as directed by the Offsite Dose Calculation Manual.

All possible indicator milk farms within the eight mile radius were contacted but no replacement farms were found. Please find attached a list of current milk farms, in Berrien County, supplied by the State of Michigan Department of Agriculture, and a list of farms that would still participate in the milk program.

Analyses on the milk samples included gamma isotopic and iodine-131. Milk samples obtained since 1985 were reviewed and the only samples that exceeded the plant's maximum value for lower limit of detection were in:

- 1986, iodine-131 was present in milk samples from 5/24 until 6/21. This was attributed to the Chernobyl accident. Gamma emitters were all less than the maximum values for lower limit of detection.

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January 8, 1996

Page 2 of 3

- 1987, iodine-131 was present in one milk sample but this measurement may not be related to plant operation since the pathway for iodine-131 to reach pasture grass on associated farms would have been airborne and no iodine-131 was detected in any charcoal cartridges during that year. Gamma emitters were all less than the maximum values for lower limit of detection.
- 1989, iodine-131 was present in three milk samples but, for the same reason as 1987, may not be related to plant operation.

Please refer to the attachment which lists the maximum values for lower limit of detection.

The Offsite Dose Calculation Manual dictates that if a replacement farm is unobtainable broadleaf samples must be obtained on a monthly frequency from the following locations:

- as close to the plant as possible in the three highest average deposition factor (D/Q) sectors and,
- 15-25 miles from the plant in one of the less prevalent D/Q sectors.

D/Q values were obtained from the Offsite Dose Calculation Manual, attachment 3.16. The three highest sectors, as measured at the site boundary, are:

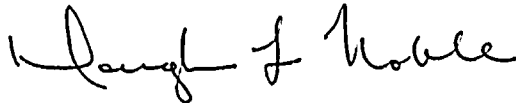
A at $3.02E^{-8}$ 1/m²,
C at $2.39E^{-8}$ 1/m²,
D at $2.54E^{-8}$ 1/m².

The least prevalent sector, as measured at the site boundary, is K at $1.27E^{-8}$ 1/m².

January 8, 1996
Page 3 of 3

As such the plant will begin broadleaf sampling in lieu of milk samples. Seasonal unavailability will prevent sample collection until the spring. This discrepancy will be noted as directed by the broadleaf sampling procedure.

Sincerely,

A handwritten signature in cursive script, appearing to read "Douglas L. Noble".

Douglas L. Noble
Superintendent
Radiation Protection

Enclosures: Milk Farm Census, Berrien County, Michigan
Department of Agriculture.

Remaining Milk Farm list.

Maximum Values for Lower Limit of Detection, Offsite
Dose Calculation Manual, PMP 6010 OSD.001, Rev 9.



PATRON	CO	TWP	SEC	ONAME	ADDR	CITY	ST	ZIP	PHONE
COUNTY: BENZIE									
W234	10	02	10	Allison Mary Lee	12028 Fowler Rd	Honor	MI	49640	616-325-8781
W233	10	06	21	Baker Earl & Bonnita	134 N Pioneer Rd	Beulah	MI	49617	616-882-7779
COUNTY: BERRIEN									
V163	11	12	12	Andrews Univ Dairy De	Dairy Rd	Berrien Sprin	MI	49104	616-471-3224
V162	11	12	29	Brohman Keith & Chas	1637 Mt Tabor	Berrien Sprin	MI	49103	
V156	11	15	10	Glen Troy Farms	2221 Glendora	Buchanan	MI	49107	
F664	11	10	29	Groenke Wm D	6017 Hockberger Rd	Eau Claire	MI	49111	616-461-6643
F681	11	19	36	Koebel Jerry	16318 Avery Rd	Three Oaks	MI	49128	
V157	11	15	23	Lozmack Dean	Rt 1 Cleveland Rd	Gallen	MI	49218	
V664	11	15	30	Lozmack Paul	4193 Elm Valley	Three Oaks	MI	49128	
V160	11	12	30	Nelson Lee	222 Snow Rd	Baroda	MI	49101	616-473-3139
F648	11	10	07	Nimtz William J	Rfd 1	Eau Claire	MI	49111	
F646	11	15	31	Payne Howard	Rfd 2 Box 148	Three Oaks	MI	49128	616-426-4367
V155	11	16	31	Powers L Nick & Barbar	16402 Wells Rd	Buchanan	MI	49017	
W119	11	20	15	Roberts Rodney	19001 Rickerman Rd	Gallen	MI	49113	
V164	11	11	28	Shuler G G & Sons	2791 Snow Rd	Baroda	MI	49101	
V158	11	15	27	Strefling Randall A	15566 Holden Rd	Gallen	MI	49113	616-545-8883
F688	11	19	04	Tappan Kenneth	Rt 2 7860 Kruger	Three Oaks	MI	49128	616-754-9960
W018	11	13	35	Wagner Carl Jr	8523 Chapel	Niles	MI	49120	
V411	11	15	18	Warmbein Jerry	14143 Mill Rd	Three Oaks	MI	49128	
F907	11	15	19	Warmbein John	Rfd 2 Bx 180	Three Oaks	MI	49128	
F679	11	10	27	Wesner George	Rfd 2	Eau Claire	MI	49111	
COUNTY: BRANCH									
V144	12	05	11	Betts Ron	824 Langwell Rd	Bronson	MI	49028	517-369-3005
V142	12	06	22	Bloom Farms	357 W Colon Rd	Coldwater	MI	49036	517-279-9154
H643	12	08	28	Bowerman William Lee	R1 218 Ray Quincy Rd	Quincy	MI	49082	517-639-4253
H535	12	04	23	Brenner Christopher Or	1180 Crandall Rd	Litchfield	MI	49252	517-542-3029
H520	12	01	12	Dunks Johnathan Or De	743 Dunks Rd	Union City	MI	49094	616-741-3169

REMAINING MILK FARMS

INDICATOR MILK FARM

<u>LOCATION</u>	<u>DISTANCE</u>	<u>SECTOR</u>	<u>D/Q</u>
Glen-Troy Farm	7.0 miles	H	$1.97\text{E}^{-8} \text{ 1/m}^2$

BACKGROUND MILK FARMS

<u>LOCATION</u>	<u>DISTANCE</u>	<u>SECTOR</u>	<u>D/Q</u>
Wyant Farm	20.7 miles	E	$2.11\text{E}^{-8} \text{ 1/m}^2$
Livinghouse Farm	20.0 miles	J	$2.06\text{E}^{-8} \text{ 1/m}^2$

D/Q measured at site boundary (594 meters)

MAXIMUM VALUES FOR LOWER LIMITS OF DETECTION ^{A,B}

Radionuclides	Food Product pCi/kg, wet	Water pCi/l	Milk pCi/l	Air Filter pCi/m ³	Fish pCi/kg, wet	Sediment pCi/kg, dry
Gross Beta		4*		0.01		
H-3		2000				
Ba-140		60	60			
La-140		15	15			
Cs-134	60	15	15	0.06	130	150
Cs-137	60	18	18	0.06	150	180
Zr-95		30				
Nb-95		15				
Mn-54		15			130	
Fe-59		30			260	
Zn-65		30			260	
Co-58		15			130	
Co-60		15			130	
I-131	60	1	1	0.07		

* LLD for drinking water



21