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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

P 8005140134

March 4, 1980

Docket No. 50-155

Mr. David P. Hoffman  
Nuclear Licensing Administrator  
Consumers Power Company  
212 West Michigan Avenue  
Jackson, Michigan 49201

Dear Mr. Hoffman:

Health Systems Division, Equifax is under contract (NO. NRC-01-79-010) to the U. S. Nuclear Regulatory Commission (NRC), to study the feasibility of performing epidemiologic studies on the health effects of exposure to low-level ionizing radiation. This study was mandated by the Congress of the United States in Public Law 95-601. Information concerning data relevant to epidemiologic studies will be solicited by one or more individuals from Equifax's project team. Individuals who may be assigned to this task include:

Richard W. Clapp  
Samuel J. Covino, Jr.  
Nancy A. Dreyer  
Frederic H. Fahey

Emmy R. Friedlander  
James R. Latham  
Jeanne E. Loughlin  
Richard R. Monson  
James Watson

Social security numbers for these individuals are included for identification purposes.

Information provided will be used to determine the adequacy of data upon which to make conclusions on feasibility and recommendations to the Congress. Equifax is not itself performing an epidemiologic study. What is needed is the types and detail of the data recorded and information on how they are obtained. (See enclosed forms for the type of information required.) No personal identifiers are required. Questions will be asked to determine the quality of the data. Any information considered proprietary will be maintained confidential by Equifax.

Your cooperation in this effort will be appreciated, and will help ensure that the results are useful to the Congress, the industry, and the NRC.

If you have any questions, please call the NRC technical monitor, Mr. Robert Goldsmith (301-443-5860).

Sincerely,

*for Thomas V. Wambach*  
Dennis L. Ziemann, Chief  
Operating Reactors Branch #2  
Division of Operating Reactors

THIS DOCUMENT CONTAINS  
POOR QUALITY PAGES

cc w/enclosure:

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212 West Michigan Avenue  
Jackson, Michigan 49201

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107 Clinton Street  
Charlevoix, Michigan 49720

Chairman  
County Board of Supervisors  
Charlevoix County  
Charlevoix, Michigan 49720

Office of the Governor (2)  
Room 1 - Capitol Building  
Lansing, Michigan 48913

Director, Technical Assessment  
Division  
Office of Radiation Programs  
(AW-459)  
U. S. Environmental Protection  
Agency  
Crystal Mall #2  
Arlington, Virginia 20460

U. S. Environmental Protection  
Agency  
Federal Activities Branch  
Region V Office  
ATTN: EIS COORDINATOR  
230 South Dearborn Street  
Chicago, Illinois 60604

Herbert Grossman, Esq., Chairman  
Atomic Safety and Licensing Board  
U. S. Nuclear Regulatory Commission  
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Dr. Oscar H. Paris  
Atomic Safety and Licensing Board  
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Mr. Frederick J. Shon  
Atomic Safety and Licensing Board  
U. S. Nuclear Regulatory Commission  
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Big Rock Point Nuclear Power Plant  
ATTN: Mr. C. J. Hartman  
Plant Superintendent  
Charlevoix, Michigan 49720

Christa-Maria  
Route 2, Box 108C  
Charlevoix, Michigan 49720

Facility \_\_\_\_\_  
 Name of Respondent \_\_\_\_\_  
 Department \_\_\_\_\_  
 Title of Record \_\_\_\_\_

FIELD VISIT - OCCUPATIONAL

A. Individual Identification (Personnel and Medical Depts.)

1. Please indicate which of the following are part of an individual's record and the form in which they are maintained.

	FORM OF RECORD		Paper	Microfilm/ Fiche	Magnetic Tape	On Line Data
	Yes	No				
Name						
Last	___	___	___	___	___	___
First	___	___	___	___	___	___
Middle Initial	___	___	___	___	___	___
Maiden Name	___	___	___	___	___	___
Address	___	___	___	___	___	___
Telephone	___	___	___	___	___	___
Social Security Number	___	___	___	___	___	___
Employee or ID Number	___	___	___	___	___	___
Date of Birth	___	___	___	___	___	___
Place of Birth	___	___	___	___	___	___
Sex	___	___	___	___	___	___
Race	___	___	___	___	___	___
Marital Status	___	___	___	___	___	___
Military Service	___	___	___	___	___	___
Next of Kin	___	___	___	___	___	___
Father's Last Name	___	___	___	___	___	___
Mother's Maiden Name	___	___	___	___	___	___
Present Occupation or Job Title	___	___	___	___	___	___
Present Employer	___	___	___	___	___	___
Date of Death	___	___	___	___	___	___

2. How far back do these records go? \_\_\_\_\_

3. Are inactive records maintained? Yes \_\_\_\_\_ No \_\_\_\_\_  
 If yes, in what form? (please check) \_\_\_\_\_ Where are inactive records located? (please check)  
 Paper \_\_\_\_\_ On site \_\_\_\_\_  
 Microfilm/fiche \_\_\_\_\_ Off site \_\_\_\_\_  
 Magnetic Tape \_\_\_\_\_ Destroyed \_\_\_\_\_  
 On Line Data \_\_\_\_\_ If destroyed, which years? \_\_\_\_\_

OCCUPATIONAL FIELD VISIT

4. Have there been any major changes in your record keeping procedures in past years? Yes \_\_\_\_\_ No \_\_\_\_\_

If so, how do prior records differ from the format indicated above?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5. Can a complete roster of all those employed at any time in the facility be obtained? Yes \_\_\_\_\_ No \_\_\_\_\_

6. Can you estimate roughly how many people are employed full time in the facility now? \_\_\_\_\_

7. How many employees would you estimate have ever been employed full time at this facility? \_\_\_\_\_

8. What proportion of those employed are monitored for radiation exposure? \_\_\_\_\_

9. What proportion of those monitored are exposed to over:  
 a) 100 mrem/yr. \_\_\_\_\_

b) 200 mrem/yr. \_\_\_\_\_

10. Please indicate which of the following are included in an individual's record and the form in which they are maintained.

	Yes	No	Paper	Form of Record Micro film/ fiche	Magnetic Tape	On Line Data
Date(s) of Hiring	___	___	___	___	___	___
Date(s) of Termination	___	___	___	___	___	___
Past Job Titles	___	___	___	___	___	___
Notes on Pre-Employment Exam	___	___	___	___	___	___
Regular Medical Exams	___	___	___	___	___	___
Exit Exam	___	___	___	___	___	___
Unusual Medical Exams	___	___	___	___	___	___
Lab Tests	___	___	___	___	___	___
Work Restrictions or Disability	___	___	___	___	___	___
Workers Compensation Claims	___	___	___	___	___	___
Health Insurance Claims	___	___	___	___	___	___
Pension Benefits	___	___	___	___	___	___
Records of Death	___	___	___	___	___	___

11. How far back do these records go? \_\_\_\_\_

OCCUPATIONAL FIELD VISIT

12. Are inactive records maintained? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, in what form? (please check)

Where are inactive records located? (please check)

Paper \_\_\_\_\_  
Micro Film/Fiche \_\_\_\_\_  
Magnetic Tape \_\_\_\_\_  
On Line Data \_\_\_\_\_

On Site \_\_\_\_\_  
Off Site \_\_\_\_\_  
Destroyed \_\_\_\_\_  
If Destroyed, which years?  
\_\_\_\_\_

13. Have there been any major changes in your record keeping procedures in past years? Yes \_\_\_\_\_ No \_\_\_\_\_

If so, how do prior records differ from the format indicated above?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

14. How many years of employment are required before receiving benefits? \_\_\_\_\_

15. Have any epidemiologic studies of radiation health effects been carried out at the facility before? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please note by whom and briefly describe each one.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. What is the procedure for obtaining access to these records?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Facility \_\_\_\_\_  
 Name of Respondent \_\_\_\_\_  
 Department \_\_\_\_\_  
 Title of Record \_\_\_\_\_

FIELD VISIT - OCCUPATIONAL

B. Exposure Data

1. Please indicate which of the following part of an individual's record and the form in which they are maintained.

FORM OF RECORD

	Yes	No	Paper	Microfilm/ Fiche	Magnetic Tape	On Line Data
Name						
Last	_____	_____	_____	_____	_____	_____
First	_____	_____	_____	_____	_____	_____
Middle Initial	_____	_____	_____	_____	_____	_____
Maiden Name	_____	_____	_____	_____	_____	_____
Address	_____	_____	_____	_____	_____	_____
Telephone	_____	_____	_____	_____	_____	_____
Social Security Number	_____	_____	_____	_____	_____	_____
Employee or ID Number	_____	_____	_____	_____	_____	_____
Date of Birth	_____	_____	_____	_____	_____	_____
Place of Birth	_____	_____	_____	_____	_____	_____
Sex	_____	_____	_____	_____	_____	_____
Race	_____	_____	_____	_____	_____	_____
Marital Status	_____	_____	_____	_____	_____	_____
Military Service	_____	_____	_____	_____	_____	_____
Next of Kin	_____	_____	_____	_____	_____	_____
Father's Last Name	_____	_____	_____	_____	_____	_____
Mother's Maiden Name	_____	_____	_____	_____	_____	_____
Present Occupation or Job Title	_____	_____	_____	_____	_____	_____
Present Employer	_____	_____	_____	_____	_____	_____
Date of Death	_____	_____	_____	_____	_____	_____

2. How far back do these records go? \_\_\_\_\_

3. Are inactive records maintained? Yes \_\_\_\_\_ No \_\_\_\_\_  
 If yes, in what form? (please check)      Where are inactive records located? (please check)

Paper _____	On site _____
Microfilm/fiche _____	Off site _____
Magnetic Tape _____	Destroyed _____
On Line Data _____	If destroyed, which years? _____

OCCUPATIONAL FIELD VISIT

4. Have there been any major changes in your record keeping procedures in past years? Yes \_\_\_\_\_ No \_\_\_\_\_

If so, how do prior records differ from the format indicated above?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5. Can you roughly estimate the number of full time employees monitored this year? \_\_\_\_\_

6. Can you roughly estimate the number of full time employees monitored since the facility opened? \_\_\_\_\_

7. Please indicate the type of dosimeters and procedures currently used at this facility and answer the questions in the table.

(If you monitor neutron dose separately from  $\gamma$ ,  $\beta$ , and x-rays please fill out the separate second sheet as well.)

Method of Dosimetry

	Film		TLD		Pocket		Bioassay		Whole Body		Other _____	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
a. Which of these methods are used?	---	---	---	---	---	---	---	---	---	---	---	---
b. Which year did this use begin?	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
c. Are records of dose kept for each employee?	---	---	---	---	---	---	---	---	---	---	---	---
d. If not, are any records kept of their exposures (e.g. an exposure log)? If yes, please fill out Part C-Exposure Log.	---	---	---	---	---	---	---	---	---	---	---	---
e. How frequently are these read?	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

OCCUPATIONAL FIELD VISIT

	Film		TLD		Pocket		Bioassay		Whole Body		Other _____	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
f. Are these read in-house?	---	---	---	---	---	---	---	---	---	---	---	---
g. If not, name either the company or individual responsible.	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
h. For quality control do you ever submit dosimeters or samples exposed to a know level?	---	---	---	---	---	---	---	---	---	---	---	---
i. Are quality control records kept?	---	---	---	---	---	---	---	---	---	---	---	---
j. Approximately what proportion of full time employees are monitored by each method?	---	---	---	---	---	---	---	---	---	---	---	---
8. Have there been any major changes in your dosimetry or dosimetric procedures in past years? If yes, please note how they differ from the above.												
	Yes _____ No _____											
_____												
_____												

7.A. Neutron Dosimetry

Method of Dosimetry

	Film		TLD		Pocket		Other _____	
	Yes	No	Yes	No	Yes	No	Yes	No
a. Which of these methods are used?	---	---	---	---	---	---	---	---
b. Which year did this use begin?	---	---	---	---	---	---	---	---
c. Are records of dose kept for each employee?	---	---	---	---	---	---	---	---



OCCUPATIONAL FIELD VISIT

7.A. Neutron Dosimetry (cont.)

Method of Dosimetry

	Film		TLD		Pocket		Other	
	Yes	No	Yes	No	Yes	No	Yes	No
d. If not, are any records kept of their exposures (e.g. an exposure log)? If yes, please fill out Part C-Exposure Log.	---	---	---	---	---	---	---	---
e. How frequently are these read?	---	---	---	---	---	---	---	---
f. Are these read in-house?	---	---	---	---	---	---	---	---
g. If not, name either the company or individual responsible.	---	---	---	---	---	---	---	---
h. For quality control do you ever submit dosimeters or samples exposed to a know level?	---	---	---	---	---	---	---	---
i. Are quality control records kept?	---	---	---	---	---	---	---	---
j. Approximately what proportion of full time employees are monitored by each method?	---	---	---	---	---	---	---	---

8.A. Have there been any major changes in your neutron dosimetry or dosimetric procedures in past years? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please note how they differ from the above. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

OCCUPATIONAL FIELD VISIT

9. Is there a standard location for wearing the dosimeter? (e.g. at the neck, at the belt, inside apron, etc.)

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please note \_\_\_\_\_

10. We would like to know if you have any other recorded information about radiation exposure, please indicate if the following information is recorded for individual employees, and, if so, where and in what media.

Data			LOCATION				
	Yes	No	Employees Record	Paper	Separate File Microfilm/ Fiche	Magnetic	On Line Tape
a. Dosimeter reading known to be inaccurate (e.g. badge left in radiation area during a procedure)	---	---	---	---	---	---	---
b. Radiation accident or incident.	---	---	---	---	---	---	---
c. Annual external exposure, present year	---	---	---	---	---	---	---
d. Annual external exposure, past years by year	---	---	---	---	---	---	---
e. Annual internal exposure, present year	---	---	---	---	---	---	---
f. Annual internal exposure, past years by year	---	---	---	---	---	---	---
g. Cumulative lifetime external exposure	---	---	---	---	---	---	---
h. Cumulative lifetime internal exposure	---	---	---	---	---	---	---
i. Previous occupational radiation exposure	---	---	---	---	---	---	---
j. Medical radiation exposures	---	---	---	---	---	---	---
k. Exposure to toxic chemicals	---	---	---	---	---	---	---
If yes, which ones?	---	---	---	---	---	---	---
_____							
_____							
_____							

OCCUPATIONAL FIELD VISIT

11. Do the cumulative external dose measurements include neutron dose? Yes \_\_\_\_\_ No \_\_\_\_\_
12. Is there some exposure level below which personnel are not monitored? If yes, what is that level? Yes \_\_\_\_\_ No \_\_\_\_\_  
\_\_\_\_\_
13. How are exposures at "less than minimum detectable levels" reported? (please check)  
As equal to the "minimum detectable level" \_\_\_\_\_  
As "less than minimum detectable level" \_\_\_\_\_  
As zero \_\_\_\_\_  
Other (specify) \_\_\_\_\_
14. Is there an industrial hygiene group in the facility? " If yes, whom may we contact? Yes \_\_\_\_\_ No \_\_\_\_\_  
\_\_\_\_\_
15. Do industrial hygiene records exist? If yes, which years do they cover? Yes \_\_\_\_\_ No \_\_\_\_\_  
\_\_\_\_\_
16. What is the procedure for obtaining access to employee records? \_\_\_\_\_  
\_\_\_\_\_

Facility \_\_\_\_\_  
 Name of Respondent \_\_\_\_\_  
 Department \_\_\_\_\_  
 Title of Record \_\_\_\_\_

FIELD VISIT

C. Exposure Log

1. Please indicate which of the following are part of an individual's record and the form in which they are maintained.

	FORM OF RECORD					
	<u>Yes</u>	<u>No</u>	<u>Paper</u>	<u>Microfilm/ Fiche</u>	<u>Magnetic Tape</u>	<u>On Line Data</u>
Name						
Last	___	___	___	___	___	___
First	___	___	___	___	___	___
Middle Initial	___	___	___	___	___	___
Maiden Name	___	___	___	___	___	___
Address	___	___	___	___	___	___
Telephone	___	___	___	___	___	___
Social Security Number	___	___	___	___	___	___
Employee or ID Number	___	___	___	___	___	___
Date of Birth	___	___	___	___	___	___
Place of Birth	___	___	___	___	___	___
Sex	___	___	___	___	___	___
Race	___	___	___	___	___	___
Date of Notation	___	___	___	___	___	___

Please note any other items included in this log.

_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___
_____	___	___	___	___	___

2. How far back do these records go? \_\_\_\_\_

3. Are inactive records maintained? Yes \_\_\_\_\_ No \_\_\_\_\_  
 If yes, in what form? (please check) \_\_\_\_\_ Where are inactive records located? (please check) \_\_\_\_\_

Paper \_\_\_\_\_  
 Microfilm/fiche \_\_\_\_\_  
 Magnetic Tape \_\_\_\_\_  
 On Line Data \_\_\_\_\_

0 site \_\_\_\_\_  
 Off site \_\_\_\_\_  
 Destroyed \_\_\_\_\_  
 If destroyed, which years? \_\_\_\_\_

EXPOSURE LOG

4. Have there been any major changes in your record keeping procedures in past years?

Yes \_\_\_\_\_ No \_\_\_\_\_

If so, how do prior records differ from the format indicated above?

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