



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
476 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

DEC 24 1990

James McKnight
Document Control Desk
U.S. Nuclear Regulatory Commission
1717 H Street, N.W.
Washington, D.C. 20555

Dear Mr. McKnight:

The attached information from Peach Bottom Citizens Radiation Monitoring Network, covering the report dates from September 30, to December 1, 1990 is to be processed through the NUDOCS system for Peach Bottom with its docket number 50-277, Unit 2 and 50-278, Unit 3.

If you have any questions concerning these reports, please contact me at FTS 346-5213 or Ms. L. Peluso of my staff at FTS 346-5323.

Sincerely,

Robert Bores, Chief
Effluents Radiation Protection Section
Facilities Radiological Safety and
Safeguards Branch
Division of Radiation Safety and
Safeguards

Enclosures:

Peach Bottom Report Dates

1. September 30 - October 6, 1990
2. October 7 - 13, 1990
3. October 14 - 20, 1990
4. October 21 - 27, 1990
5. October 28 - November 3, 1990
6. November 4 - 10, 1990
7. November 11 - 17, 1990
8. November 18 - 24, 1990
9. November 25 - December 1, 1990

IFAS
11

PEACH BOTTOM ALLIANCE
 3500 JOURDAN AVENUE
 DARLINGTON, MARYLAND
 21034

CITIZENS RADIATION MONITORING NETWORK

FOR: Thomas T. Martin
 DATES COVERED: 30 September thru 6 October '90
 STATIONS REPORTING: 9

station	# records	counts/min.	
		average	max. deviation
A	<u>11</u>	<u>13.78</u>	<u>-1.53 to +3.45</u>
B	<u>13</u>	<u>12.31</u>	<u>-1.75 to +1.12</u>
C	<u>6</u>	<u>16.85</u>	<u>-1.36 to +2.14</u>
D	<u>14</u>	<u>18.30</u>	<u>-1.60 to +2.30</u> *
E	<u>10</u>	<u>16.24</u>	<u>-1.24 to +1.86</u> **
F	<u>13</u>	<u>12.64</u>	<u>-0.94 to +3.56</u>
G	<u>6</u>	<u>9.37</u>	<u>-1.37 to +0.93</u>
H	<u>13</u>	<u>14.90</u>	<u>-3.0 to +2.90</u>
J	<u>—</u>	<u>—</u>	<u>—</u>
K	<u>12</u>	<u>12.82</u>	<u>-2.82 to +2.48</u>

Submitted by

Jan S. Parson
301 457 4557

* Alert 1 Oct 5¹⁵ AM @ 31 for 1 minute wind westerly;
 Station D 4 1/2 mi north of plant (0° azimuth)

** Alert 2 Oct 8²⁰ PM @ 32 for 1 minute.
 Station E, ~~SW~~ NW of plant 4 1/2 mi.

PEACH BOTTOM ALLIANCE
Week of 30 Sept - 6 Oct

MONITOR READINGS

90
80
70
60
50
40
30
20
10
0

5:15 AM
10 Oct 90
BEST wind
Sta. D
4 1/2 mi N
(10° az.)

8:30 PM
20 Oct 90
Sta. E
4 1/2 mi Nw
(315°)

Time
Date
Weather
Station



PEACH BOTTOM ALLIANCE
 3800 JOURDAN AVENUE
 DARLINGTON, MARYLAND
 21054

CITIZENS RADIATION MONITORING NETWORK

FOR: Thomas Martin
 DATES COVERED: 7-13 October 90
 STATIONS REPORTING: 8

Station	# records	counts/min.	
		average	max. deviation
A	<u>12</u>	<u>12.69</u>	<u>-1.42 to +1.79</u> ①
B	<u>14</u>	<u>12.09</u>	<u>-0.89 to +0.81</u>
C	<u>13</u>	<u>17.13</u>	<u>-1.52 to +1.75</u> ②
D	<u>14</u>	<u>17.90</u>	<u>-1.80 to +1.90</u>
E	<u>11</u>	<u>15.50</u>	<u>-0.9 to +1.2</u>
F	<u>14</u>	<u>11.50</u>	<u>-0.89 to +1.2</u>
G	<u>—</u>	<u>—</u>	<u>—</u>
H	<u>14</u>	<u>13.3</u>	<u>-1.5 to +1.6</u> ③
J	<u>—</u>	<u>—</u>	<u>—</u>
K	<u>13</u>	<u>11.6</u>	<u>-1.7 to +1.3</u>

Submitted by

Jean S. Purvis

- ① Sta. A: 11 Oct. 3³¹ PM. Alert @ 30 for 3 minutes.
 winds SE.
- ② Sta. C: 10 Oct. 1²⁴ PM. Alert @ 32 for 1 minute. winds SE.
 13 Oct. 5⁰⁵ PM " 31 " "
 " 11⁴⁹ PM " 31 " "
- ③ Sta. H: 7 Oct. 4¹⁰ AM Alert to 30 for 1 minute SW wind.

PEACH BOTTOM ALLOWANCE
Week of 7-13 Oct 90

MONITOR READINGS

Time
Date
Weather
Station

3³¹ 3³² 5³³ PM

1²⁴ PM

5¹⁵ PM

11¹⁸ PM

4¹⁰ AM

11 Oct 90

10 Oct 90

13 Oct 90

13 Oct 90

7 Oct 90

sw wind

SE wind

C

C

SW winds

A

C

C

C

H

5¹/₄ mi WSW

7¹/₂ mi E

11 mi ESE

(250°)

(90°)

(112.5°)

90
80
70
60
50
40
30
20
10
0



PEACH BOTTOM ALLIANCE
3500 JOURDAN AVENUE
DARLINGTON, MARYLAND
21034

CITIZENS RADIATION MONITORING NETWORK

FOR: Thomas T. Martin
DATES COVERED: 14-20 October 1990
STATIONS REPORTING: 7

station	# records	counts/min.	
		average	max. deviation
A	<u>12</u>	<u>12.9</u>	<u>-1.8 to +5.5</u>
B	<u>11</u>	<u>11.9</u>	<u>-1.3 to +0.4</u>
C	<u>—</u>	<u>—</u>	<u>—</u>
D	<u>14</u>	<u>19.0</u>	<u>-2.7 to +3.6</u>
E	<u>10</u>	<u>15.6</u>	<u>-1.9 to +1.1</u>
F	<u>13</u>	<u>11.7</u>	<u>-0.9 to +0.9</u>
G	<u>—</u>	<u>—</u>	<u>—</u>
H	<u>13</u>	<u>14.7</u>	<u>-2.9 to +2.7</u>
J	<u>—</u>	<u>—</u>	<u>—</u>
K	<u>13</u>	<u>12.5</u>	<u>-1.5 to +1.6</u>

Submitted by

BEwing

there were no alerts this week. BE

PEACH BOTTOM ALLIANCE
 3500 JOURDAN AVENUE
 DARLINGTON, MARYLAND
 21034

CITIZENS RADIATION MONITORING NETWORK

FOR: Mr Martin
 DATES COVERED: 21-27 October 1990
 STATIONS REPORTING: 8

station	# records	counts/min.	
		average	max. deviation
A	<u>13</u>	<u>14.0</u>	<u>-2.7 to +9.4</u>
B	<u>—</u>	<u>—</u>	<u>—</u>
C	<u>4</u>	<u>18.0</u>	<u>-2.1 to +2.5</u> *
D	<u>9</u>	<u>19.0</u>	<u>-1.6 to +2.3</u>
E	<u>10</u>	<u>14.6</u>	<u>-0.8 to +2.1</u>
F	<u>11</u>	<u>11.6</u>	<u>-0.5 to +0.7</u>
G	<u>7</u>	<u>9.7</u>	<u>-0.4 to +0.5</u>
H	<u>13</u>	<u>13.8</u>	<u>-2.4 to +1.9</u>
J	<u>—</u>	<u>—</u>	<u>—</u>
K	<u>13</u>	<u>12.2</u>	<u>-1.9 to +1.5</u> 1.

Submitted by

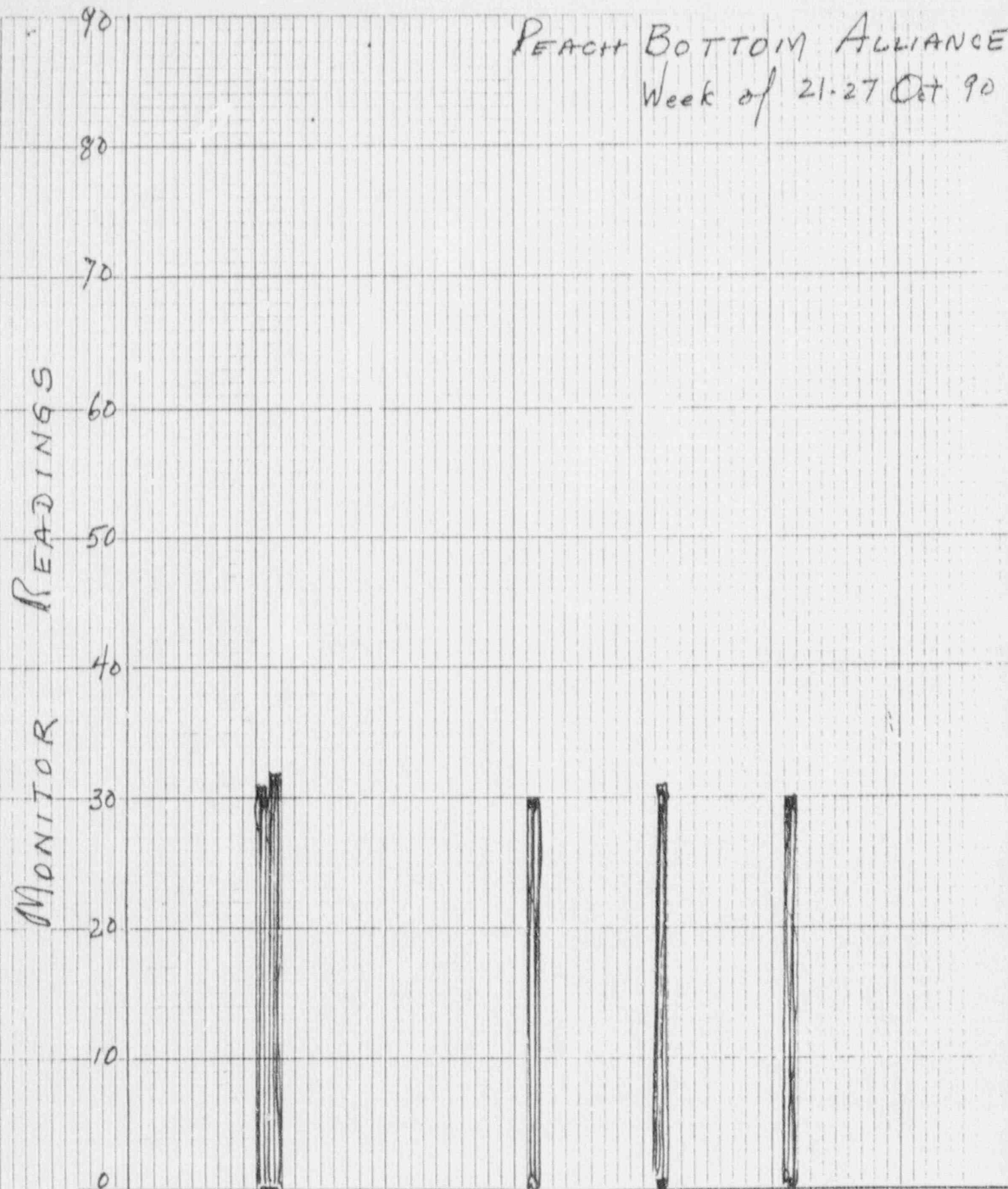
B.ewing

* Alerts: Sta. C, 7 1/2 mi E (90°)
11⁴³ & 11⁴⁴ AM, 24 October, 31 & 32 counts.

Sta. H, 11 mi ESE (115°)
2³⁰ AM 22 Oct. 30 counts for 1 minute
wind SW.
10⁵⁰ PM 25 Oct. 31 counts for 1 minute
wind NW.
8²⁵ AM 27 Oct. 30 counts for 1 minute
wind NW.

1. Monitor J. donated to Svetlana Timchenko, Minsk Russia on 7 October '90.

PEACH BOTTOM ALLIANCE
 Week of 21-27 Oct 90



Time	11 ⁴³ AM	2 ³⁰ AM	10 ⁵⁰ PM	8 ²⁸ AM
Date	24 Oct. 90	22 Oct 90	23 Oct 90	27 Oct 90
Weather	?	sw	NW	NW
Station	(C)	(H)	(H)	(H)

Cancer around nuclear plant

Boston

A US study released last week* shows an increase in the frequency of leukaemia among adults who lived and worked close to the Pilgrim nuclear power plant in Massachusetts in 1978-83. That news is certain to intensify the debate over links between cancer incidence and exposure to a low level of radiation, given that the study follows a US National Cancer Institute (NCI) study that found no increased incidence in cancer deaths around nuclear facilities and British data showing a cluster of cases of childhood leukaemia around the Sellafield nuclear plant (see *Nature* 347, 216 & 343, 679; 1990).

The Pilgrim study, carried out by the Massachusetts Department of Public Health, examined the incidence of leukaemia in persons living and working in 22 communities situated near the plant, taking into account how close to the plant they lived and worked and for how long. Although a fourfold incidence in leukaemia was found in people who lived within ten miles of the plant in the period 1979-83, no relationship between leukaemia cases and proximity to the plant was found during 1983-86. Leukaemia normally occurs at a rate of 2.5 cases per 100,000 population; the Pilgrim study was triggered by data suggesting that the rate close to the plant was double the Massachusetts average.

Assuming that it takes five years for leukaemia to develop, the 1979-83 increase in leukaemia incidence can be linked to a period of higher-than-normal emission of airborne radionuclides from the Pilgrim plant during the mid-1970s. Such emissions fell off considerably after 1978.

Three years ago, the Pilgrim plant was described by federal officials as "the worst-run" nuclear plant in the United States. But even during the periods of increased air emissions, the levels of radiation to which residents were exposed are believed to have been well within the Nuclear Regulatory Commission's limit of 500 millirem per year. At least since 1980, exposure levels are believed to have been within the Environmental Protection Agency's more stringent limit of 25 millirem per year.

Officials at Boston Edison, the utility that operates the Pilgrim plant, criticize the timing and methods of the study. But Daniel Hoffman, a researcher at the US Centers for Disease Control who led the committee that reviewed the results, called the study "well-designed, impressive, and surprising". Hoffman stressed that

the Pilgrim study is one of the first to correct for confounding factors and says that it "suggests strongly that there may be increased risk levels [from radiation] at levels of exposure far lower than we would expect".

Through interviews, the Pilgrim study collected detailed data about the 313 subjects involved and the length of time they had lived and worked near to the plant. The researchers tracked all types of adult leukaemia except chronic lymphocytic leukaemia (because it is widely considered to be the only type of leukaemia not associated with radiation). Confounding factors, including occupation, age, tobacco consumption and social status were taken into account, along with such factors as the proximity of toxic waste dumps and the origin of the drinking water. During the 1979-83 period, the researchers could even show that the likelihood of developing leukaemia was linked to where and

US SPACE PROGRAMME

Not so successful selling

Washington

If there remains any doubt that it is difficult to get private companies to enter the space market, a new report on commercialization at the National Aeronautics and Space Administration (NASA) is sure to remove it. The review*, by the Congressional General Accounting Office (GAO), tells the sad tale of seven projects (worth some \$700 million) that NASA tried to spin off to industry in 1989. After a year of solicitations with only one taker, six of the projects are now back at NASA, presumably delayed a year at substantial cost — casualties of the administration's fervour for industry participation in the US space programme.

Ranging from a weightlessness laboratory to a robotic arm for the space station, the seven projects represented NASA's best guess at candidates for commercialization in late 1988 when the space agency was in negotiations with the White House to reduce its 1990 budget request, the GAO says. As a compromise, NASA agreed to remove the seven projects from its budget, on the assumption that industry would take them over.

That assumption quickly proved false, GAO found. In five of the projects, "NASA found that commercial aerospace, construction, and finance companies were not willing to invest... because they perceived that few or no commercial markets existed". (Several companies did, however, offer to loan

for how long people lived in the area.

Robert Knorr, one of the study's two principal investigators, stressed the differences between the Pilgrim study and NCI's recent mortality study. The Pilgrim study focused on a much smaller and more specific geographic area than did the NCI study, which drew only upon county data that would not detect highly-local increases in cancer. The Pilgrim study also looked at the incidence of disease rather than at only mortality.

After the results of the study were released, people living close to the plant flooded a state telephone 'hotline' number with calls. Massachusetts Governor Michael Dukakis has asked for the state to adopt the strictest radiation emission standard in the country, which would limit exposure of those living near nuclear plants to 10 millirem per year. State researchers have already begun studies on the incidence of childhood leukaemia in the vicinity of the Pilgrim plant and of leukaemia among workers at the plant.

Seth Shulman

NASA the money to build the projects itself.) GAO investigators also found that, in the case of three of the projects — a space station payload processing laboratory, an instrument processing laboratory and the robotic arm — the design process was as much as 60 per cent completed. To modify the facilities to allow for some commercial use would have required a costly and time-consuming redesign, prospective companies complained.

Among other errors, GAO found that NASA had badly miscalculated commercial financing costs, had underestimated the daunting technical risk of the projects, and had neglected to note that the safety requirements of certain projects limited the qualified private builders to those already working on the project under contract.

Except for an orbiting cryogenic pallet, NASA was forced to take all the projects back into its fold, although it was unable to find funding this year for four of them.

In part because of its experiences, NASA set up in July an internal commercial space steering committee. Chaired by NASA deputy administrator J. R. Thompson, the panel is expected to place high priority on finding agency projects that really are suitable for commercialization.

Christopher Anderson

Nature editorial changes

Rory Howlett has been appointed Book Review/Commentary Editor of *Nature*. Tim Lincoln is now News and Views Editor, and Maxine Clarke Executive Editor.

*Southeastern Massachusetts Health Study Final Report: Investigation of Leukemia Incidence in 22 Massachusetts Communities 1978-1986. Massachusetts Department of Public Health, Division of Environmental Health Assessment, October 1990.

*Space Projects: Improvements Needed in Selecting Future Projects for Private Financing. US General Accounting Office, September, 1990.

PEACH BOTTOM ALLIANCE
 3500 JOURDAN AVENUE
 DARLINGTON, MARYLAND
 21034

CITIZENS RADIATION MONITORING NETWORK

FOR:

Thomas Martin

DATES COVERED: 28 October - 3 November 90

STATIONS REPORTING:

station	# records	counts/min.	
		average	max. deviation
A	11	11.9	-1.2 to +4.7
B	14	11.6	-2.1 to +1.8
C	8	17.9	-0.3 to +0.5
D	11	19.2	-3.0 to +1.8
E	10	14.9	-1.8 to +1.2
F	12	11.6	-0.8 to +1.2
G	—	—	—
H	14	14.3	-2.3 to +2.5 *
J	—	—	—
K	14	12.6	-1.3 to +4.3

Submitted by

J. Swinney

* Alert: 30 October, 12⁰¹ AM 1 minute at 32 cpm
 Winds NNW Station H is ESE
 of plant (114°) at 11 miles.

Station G withdrawn - monitor to be relocated.

PEACH BOTTOM ALLIANCE
Week of 28 Oct - 3 Nov 90

90
80
70
60
50
40
30
20
10
0

READINGS

MONITOR

12⁰⁰ AM
Wed 30 Oct 90
Wind NNW
ft
ESE of plant
(1140) at 11 mi.

Time
Date
Weather
Station

PEACH BOTTOM ALLIANCE
 2300 JOURDAN AVENUE
 DARLINGTON, MARYLAND
 21034

CITIZENS RADIATION MONITORING NETWORK

FOR: Thomas T. Martin
 DATES COVERED: 4-10 November 90
 STATIONS REPORTING: 8

station	# records	counts/min.	
		average	max. deviation
A	<u>10</u>	<u>14.3</u>	<u>-3.3 to +3.4</u> *
B	<u>14</u>	<u>11.9</u>	<u>-1.8 to +2.3</u>
C	<u>5</u>	<u>12.4</u>	<u>-0.9 to +0.6</u>
D	<u>13</u>	<u>18.7</u>	<u>-1.9 to +1.7</u>
E	<u>10</u>	<u>14.6</u>	<u>-0.9 to +1.4</u>
F	<u>12</u>	<u>11.9</u>	<u>-0.9 to +1.1</u>
G	<u>—</u>	<u>—</u>	<u>—</u>
H	<u>13</u>	<u>13.9</u>	<u>-1.6 to +3.6</u>
J	<u>—</u>	<u>—</u>	<u>—</u>
K	<u>13</u>	<u>12.7</u>	<u>-2.0 to +2.1</u>

Submitted by

Brewing

* Alert: 10 Nov 6¹⁵ AM: 34 cpm for 1 minute.
 STA. A. 5 mi WSW/plant @ 260°
 winds NW.

PEACH BOTTOM ALLIANCE
Week of 4-10 Nov 90

90
80
70
60
50
40
30
20
10
0

READINGS

MONITOR

6:15 PM
10 Nov 90
No wind.
A

5 mi WSW / plant
@ 260°

PEACH BOTTOM ALLIANCE
 3200 JOURDAN AVENUE
 DARLINGTON, MARYLAND
 21034

CITIZENS RADIATION MONITORING NETWORK

FOR:

Thomas Martin

DATES COVERED:

11 thru 17 November

STATIONS REPORTING:

8

station	# records	counts/min.	
		average	max. deviation
A	5	13.7	-2.1 to +1.9
B	14	11.3	-2.1 to +2.5
C	9	16.7	-1.3 to +1.5 *
D	14	18.6	-1.3 to +0.6
E	12	14.7	-0.8 to +0.4
F	12	11.6	-1.0 to +1.4
G	—	—	—
H	14	13.4	-3.2 to +3.7 *
J	—	—	—
K	13	12.5	-1.2 to +1.1

Submitted by

Sean S. Swirp

Alert: Sta C 7½ mi E of plant @ 114°

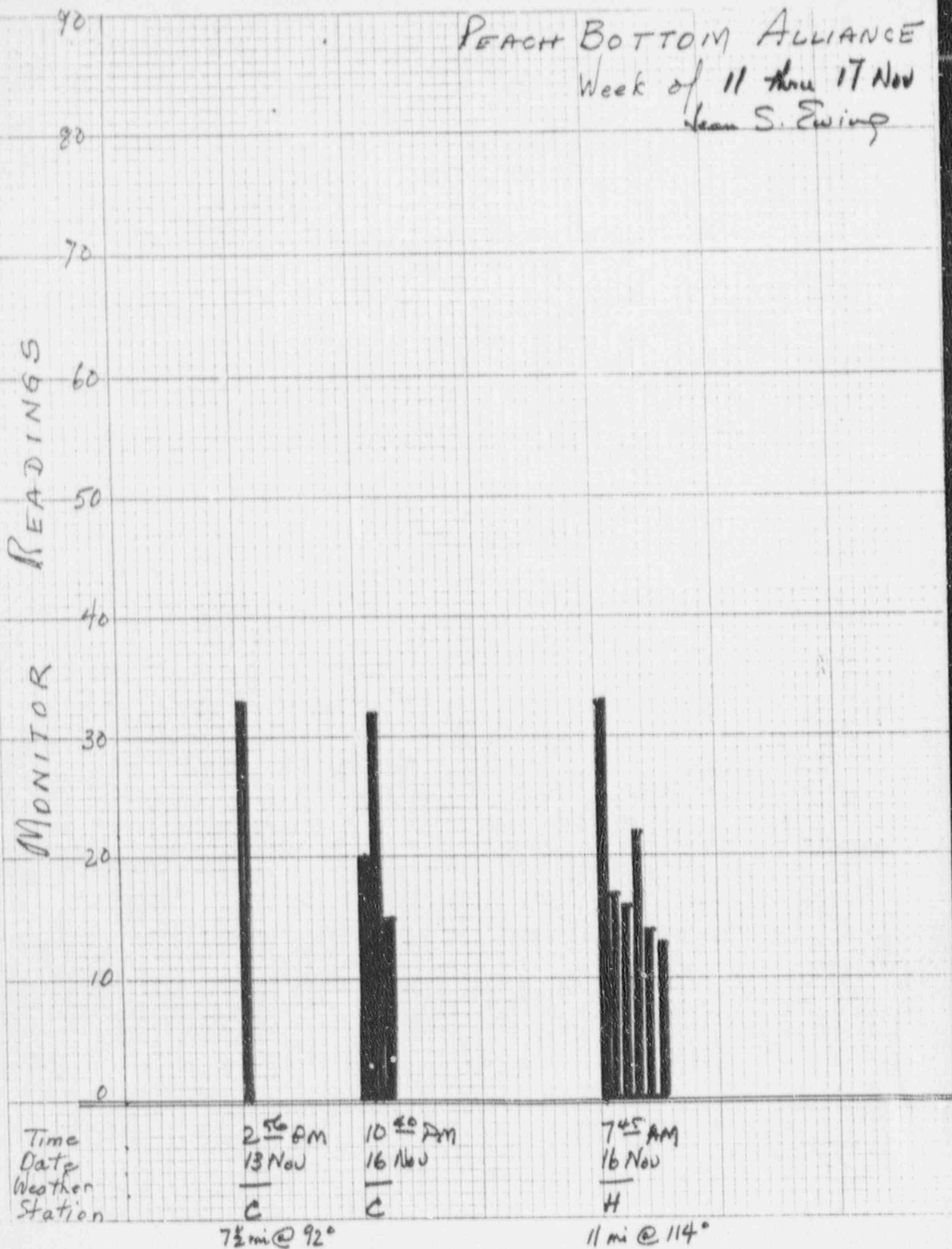
- 13 Nov. 2:56 PM. 33.2 _{cpm} / minute.

- 16 Nov. 10:40 PM. 32.2 _{cpm} / minute.

Sta H 11 mi ESE of plant @ 92°

- 16 Nov. 7:45 AM. 33 cpm / minute.

PEACH BOTTOM ALLIANCE
 Week of 11 thru 17 Nov
 Jean S. Ewing



PEACH BOTTOM ALLIANCE
 3500 JOURDAN AVENUE
 DARLINGTON, MARYLAND
 21054

CITIZENS RADIATION MONITORING NETWORK

FOR:

Thomas Martin

DATES COVERED: 18 thru 24 November 1990

STATIONS REPORTING: 9

station	# records	counts/min.	
		average	max. deviation
A	9	12.6	-0.5 to +1.2
B	14	12.4	-1.4 to +6.6
C	9	16.3	-0.3 to +1.2
D	13	18.6	-3.8 to +2.2
E	10	13.6	-1.7 to +1.0
F	11	12.0	-0.4 to +1.6
G			
H	13	14.0	-3.4 to +2.7
J ^①	14	14.1	-6.1 to +6.9 *
K	8	13.0	-2.8 to +1.6

Submitted by

J. S. Swip

① Station J - now located 11 mi W of plant @ 275°

* Alert at Sta. J. 23 Nov 6⁰⁵ AM, 31cpm for 1 minute

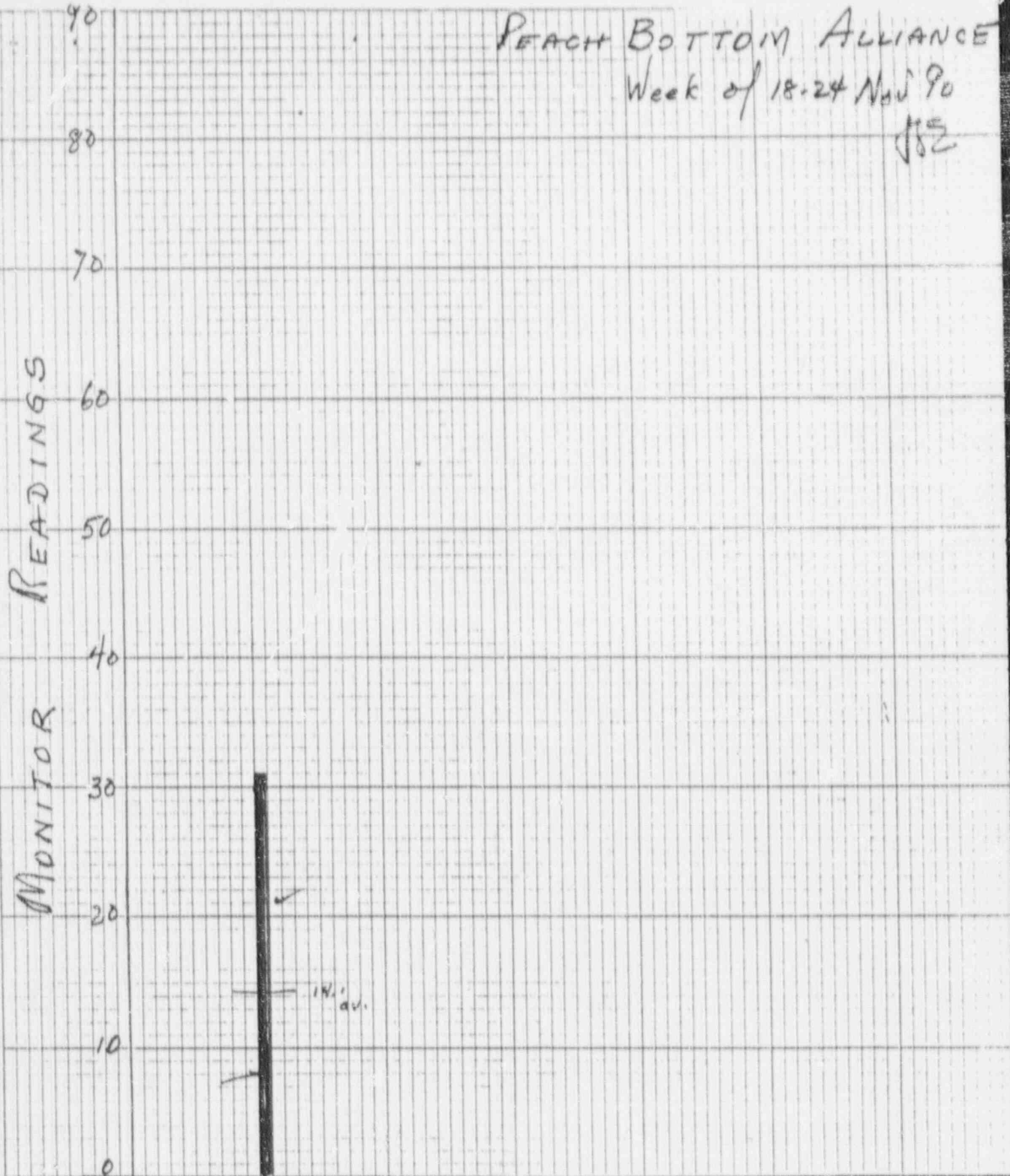
PEACH BOTTOM ALLIANCE
8900 JOURDAN AVE.
DARLINGTON, MD
21054

Monitors in Peach Bottom area

<u>Station Designation</u>	<u>Location</u>			
A	5 mi	WSW	o/plant	@ 260°
J	11 mi	W	"	275°
E	5 mi	NW	"	315°
D	4½ mi	N	"	2°
C	7½ mi	E	"	92°
H	11 mi	ESE	"	114°
B	9 mi	SSE	"	157°
K	16 mi	S	"	190°
F	12 mi	SSW	"	213°

JJewing
November 1990

PEACH BOTTOM ALLIANCE
Week of 18-24 Nov 90
JSE



Time : 6:05 AM
Date : Fri, 23 Nov
Weather : rain & fog
Station : J

11 mi, 275°

PEACH BOTTOM ALLIANCE
 3500 JOURDAN AVENUE
 DARLINGTON, MARYLAND
 21034

CITIZENS RADIATION MONITORING NETWORK

FOR: Robert Bozic
 DATES COVERED: 25 Nov. thru 1 Dec 90
 STATIONS REPORTING: 9

station	# records	counts/min. average	max. deviation
A	<u>11</u>	<u>13.6</u>	<u>-1.9 to +1.9</u>
B	<u>14</u>	<u>11.7</u>	<u>-0.7 to +1.0</u>
C	<u>10</u>	<u>16.3</u>	<u>-1.9 to +1.6</u> *
D	<u>14</u>	<u>18.3</u>	<u>-1.5 to +5.4</u>
E	<u>11</u>	<u>14.7</u>	<u>-2.2 to +2.0</u>
F	<u>13</u>	<u>11.9</u>	<u>-1.9 to +0.6</u>
G	<u>—</u>	<u>—</u>	<u>—</u>
H	<u>14</u>	<u>14.4</u>	<u>-2.8 to +1.7</u>
J	<u>12</u>	<u>11.9</u>	<u>-3.7 to +10.8</u>
K	<u>12</u>	<u>11.8</u>	<u>-1.3 to +1.1</u>

Submitted by

B. Zwanz

Alert: Sta C, 7½ mi E @ 92°

- 28 Nov 12²⁶ PM wind SW = 30 ^{CPM} =

- 1 Dec 8⁰⁸ PM wind SW = 30 ^{CPM} =

PEACH BOTTOM ALLIANCE
 Week of 28 Nov - 1 Dec 90

READINGS

MONITOR

90
80
70
60
50
40
30
20
10
0

Time	12 ²⁶ PM	5 ¹⁵ PM
Date	28 Nov	1 Dec
Weather	Sw wind	Sw wind
Station	C	C

7 1/2 mi E of plant @ 92°