From: Jason Schaperow RTJ
To: Robert Palla
Date: Tue, Sep 19, 2000 4:50 PM
Subject: MACCS Results vs. Decay Time

Attached are the results you requested.

CC: Charles Tinkler, John Flack

T-55

From: Jason Schaperow
To: John Flack
Date: Tue, Sep 19, 2000 3:43 PM
Subject: MACCS Results for Bob Palla

An August 25, 2000, memorandum from R. Barrett to J. Flack requested MACCS calculations for the following decay times: 30 and 90 days, 1, 2, 5, and 10 years. As you know, we performed these calculations and recently gave them results (early fatalities, cancer fatalities, and population dose) for the population within 50 and 100 miles. Although it was not specifically called out in the August 25 memorandum, Bob Palla is requesting results for (a) individual risk of early fatality within 1 mile and (b) individual risk of cancer fatality within 10 miles. He is requesting these results for comparison with the Quantitative Health Objectives. I have tabulated these results (attached) from my existing output files. If it is acceptable to you, I will forward these results to Bob Palla via e-mail.

CC: Charles Tinkler

Table 2a Results based on Upper Bound Source Term

Case	Decay Time	Mean Consequences	
		Ind. Risk of Early Fat. (1 mi)	Ind. Risk of Cancer Fat. (10 mi)
79a	30 days	4.43E-02	8.24E-02
79b	90 days	4.19E-02	8.20E-02
79c	1 year	3.46E-02	8.49E-02
79d	2 years	2.57E-02	8.42E-02
79e	5 years	8.96E-03	7.08E-02
79f	10 years	4.68E-03	6.39E-02
80aa	30 days	2.01E-03	4.79E-03
80ba	90 days	1.87E-03	4.77E-03
80ca	1 year	1.50E-03	4.33E-03
80da	2 years	1.12E-03	3.70E-03
80ea	5 years	3.99E-04	2.93E-03
80fa	10 years	2.05E-04	2.64E-03

Table 3a Results based on NUREG-1465 Source Term

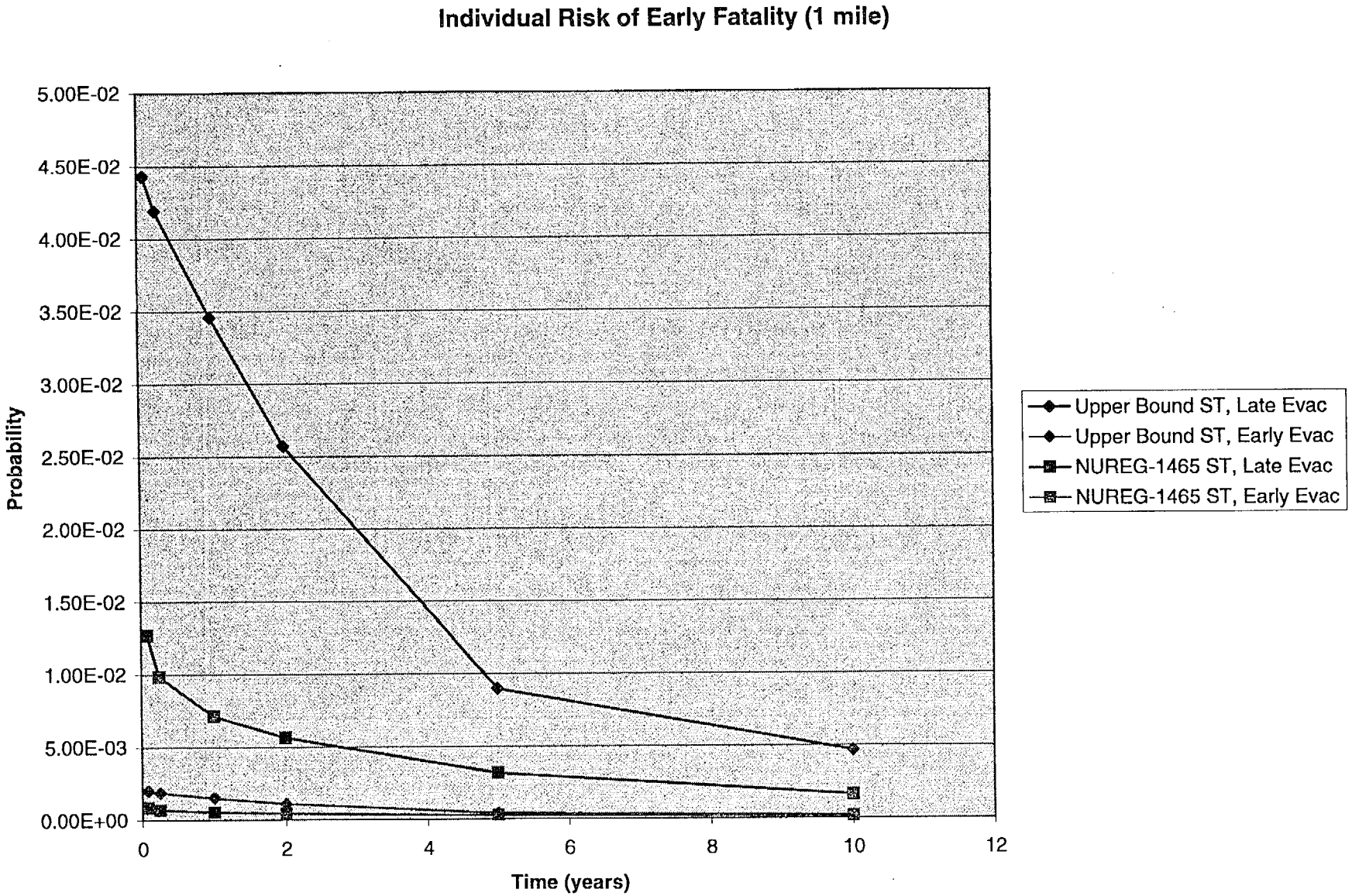
Case	Decay Time	Mean Consequences	
		Ind. Risk of Early Fat. (1 mi)	Ind. Risk of Cancer Fat. (10 mi)
77a	30 days	1.27E-02	1.88E-02
77b	90 days	9.86E-03	1.82E-02
77c	1 year	7.13E-03	1.68E-02
77d	2 years	5.64E-03	1.58E-02
77e	5 years	3.18E-03	1.43E-02
77f	10 years	1.63E-03	1.29E-02
78aa	30 days	8.36E-04	9.92E-04
78ba	90 days	6.83E-04	9.62E-04
78ca	1 year	5.44E-04	9.09E-04
78da	2 years	4.41E-04	8.71E-04
78ea	5 years	2.54E-04	8.14E-04
78fa	10 years	1.47E-04	7.70E-04

Decay Tim Ind. Risk of Early Fat. (1 mi)

(years)	Upper Bou ST Late Evac	Upper Bou ST Early Evac	NUREG-1 ST Late Evac	NUREG-1465 ST Early Evac
0.082192	4.43E-02	2.01E-03	1.27E-02	8.36E-04
0.246575	4.19E-02	1.87E-03	9.86E-03	6.83E-04
1	3.46E-02	1.50E-03	7.13E-03	5.44E-04
2	2.57E-02	1.12E-03	5.64E-03	4.41E-04
5	8.96E-03	3.99E-04	3.18E-03	2.54E-04
10	4.68E-03	2.05E-04	1.63E-03	1.47E-04

Decay Tim Ind. Risk of Cancer Fat. (10 mi)

(years)	Upper Bou ST Late Evac	Upper Bou ST Early Evac	NUREG-1 ST Late Evac	NUREG-1465 ST Early Evac
0.082192	8.24E-02	4.79E-03	1.88E-02	9.92E-04
0.246575	8.20E-02	4.77E-03	1.82E-02	9.62E-04
1	8.49E-02	4.33E-03	1.68E-02	9.09E-04
2	8.42E-02	3.70E-03	1.58E-02	8.71E-04
5	7.08E-02	2.93E-03	1.43E-02	8.14E-04
10	6.39E-02	2.64E-03	1.29E-02	7.70E-04


Individual Risk of Early Fatality (1 mile)
5.00E-02
4.50E-02
4.00E-02
3.50E-02
3.00E-02
2.50E-02
2.00E-02
1.50E-02
1.00E-02
5.00E-03
0.00E+00
Probability
0
2
4
6
8
10
12
Time (years)
Upper Bound ST, Late Evac
Upper Bound ST, Early Evac
NUREG-1465 ST, Late Evac
NUREG-1465 ST, Early Evac

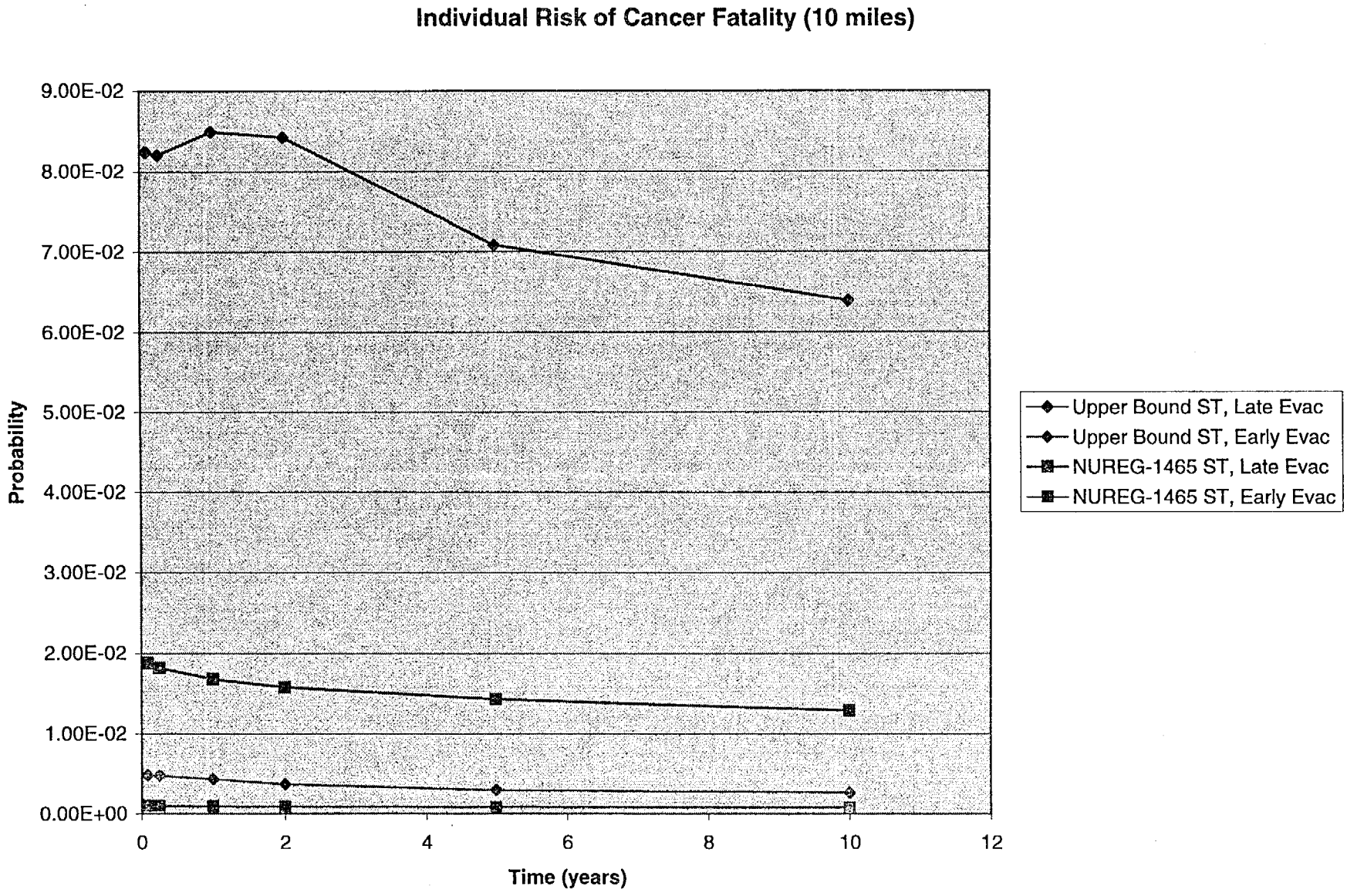

Individual Risk of Cancer Fatality (10 miles)
9.00E-02
8.00E-02
7.00E-02
6.00E-02
5.00E-02
4.00E-02
3.00E-02
2.00E-02
1.00E-02
0.00E+00
Probability
0
2
4
6
8
10
12
Time (years)
Upper Bound ST, Late Evac
Upper Bound ST, Early Evac
NUREG-1465 ST, Late Evac
NUREG-1465 ST, Early Evac

Table 2a Results based on Upper Bound Source Term

Case	Decay Time	Mean Consequences	
		Individual Risk of an Early Fatality (within one mile)	Individual Risk of a Cancer Fatality (within ten miles)
79a	30 days	4.43×10^{-2}	8.24×10^{-2}
79b	90 days	4.19×10^{-2}	8.20×10^{-2}
79c	1 year	3.46×10^{-2}	8.49×10^{-2}
79d	2 years	2.57×10^{-2}	8.42×10^{-2}
79e	5 years	8.96×10^{-3}	7.08×10^{-2}
79f	10 years	4.68×10^{-3}	6.39×10^{-2}
80a[a]	30 days	2.01×10^{-3}	4.79×10^{-3}
80b[a]	90 days	1.87×10^{-3}	4.77×10^{-3}
80c[a]	1 year	1.50×10^{-3}	4.33×10^{-3}
80d[a]	2 years	1.12×10^{-3}	3.70×10^{-3}
80e[a]	5 years	3.99×10^{-4}	2.93×10^{-3}
80f[a]	10 years	2.05×10^{-4}	2.64×10^{-3}

[a]Based on early evacuation.

Table 3a Results based on NUREG-1465 Source Term

Case	Decay Time	Mean Consequences	
		Individual Risk of an Early Fatality (within one mile)	Individual Risk of a Cancer Fatality (within ten miles)
77a	30 days	1.27×10^{-2}	1.88×10^{-2}
77b	90 days	9.86×10^{-3}	1.82×10^{-2}
77c	1 year	7.13×10^{-3}	1.68×10^{-2}
77d	2 years	5.64×10^{-3}	1.58×10^{-2}
77e	5 years	3.18×10^{-3}	1.43×10^{-2}
77f	10 years	1.63×10^{-3}	1.29×10^{-2}
78a[a]	30 days	8.36×10^{-4}	9.92×10^{-4}
78b[a]	90 days	6.83×10^{-4}	9.62×10^{-4}
78c[a]	1 year	5.44×10^{-4}	9.09×10^{-4}
78d[a]	2 years	4.41×10^{-4}	8.71×10^{-4}
78e[a]	5 years	2.54×10^{-4}	8.14×10^{-4}
78f[a]	10 years	1.47×10^{-4}	7.70×10^{-4}

[a]Based on early evacuation.