

ICR ATTACHMENT 4

Calculation of Hourly Wage Rates (Excerpt from Economic Impact Analysis)

APPENDIX A: INFLATORS AND WAGE RATES

This appendix provides a brief discussion of the wage rates, inflators, and methods that were used to derive the final Afully loaded@ wages used in the calculation of quantified costs. Base hourly wages for relevant labor categories were loaded with factors for benefits and overhead to derive a loaded hourly rate. If the loaded hourly rate was not already in year 2007 dollars, it was then inflated to year 2007 dollars by multiplying by the appropriate inflation factor. The derivation of fully loaded wages in year 2007 dollars, for each of the labor categories used in the report, is discussed in Section A.1 and is summarized in Table A.1. The derivation of the different inflation factors used to inflate wages to year 2007 dollars is discussed in Section A.2 and is summarized in Table A.2.

A.1. Derivation of Loaded Wage Rates

A.1.1 Technical, Managerial, and Clerical Labor¹

The basic method used to derive loaded wage rates for technical, managerial, and clerical personnel is described more fully in *Wage Rates for Economic Analysis of the Toxics Release Inventory Program* (Rice, 2002).

December 2007 average wages for technical, managerial, and clerical labor were taken from the Employer Costs for Employee Compensation (ECEC) report from the Bureau of Labor Statistics for all goods-producing, private industries (BLS, 2008).²

The additional cost of benefits, such as paid leave and insurance (Afringe benefits@), specific to each labor category, are also taken from the same BLS series. Fringe benefit as a percentage of wage is then calculated separately for each labor category. For example, the average wage rate in December 2007 for technical labor was \$33.25; the average fringe benefit was \$16.54. So fringe benefit as a percentage of wage rate for technical labor was $16.54/33.25$, or approximately 49.7%.

¹ Many Labor hourly rates in this analysis are lower than hourly rates for the same labor categories in an earlier SNUR economic analysis (EPAB, 1999). EPA does not mean to suggest that actual hourly rates declined. Rather, the apparent decline is due to a changed method of calculating hourly costs for the same labor categories. There were three changes: (1) Previously, the 17% overhead was applied to wages-plus-fringe benefits. Now it is applied only to wages. This change reduces calculated overhead. (2) Before, most wage rates were based on older data and then inflated to current dollars. Here, most wage rates are based on recent data. (3) Finally, fringe benefits were based on an assumed percent of wages. Here, private industry fringe benefits are based on actual fringe benefits taken from recent BLS data.

² Employer Costs for Employee Compensation, Private industry workers, Goods-producing industries, white-collar occupations, as published by the U.S. Department of Labor, Bureau of Labor Statistics. The December 2007 values for these series were extracted on February 29, 2008.

An additional loading factor of 17 percent is applied to wages for overhead.³ This overhead loading factor is added to the benefits loading factor, and the total is then applied to the base wage to derive the fully loaded wage. The fully loaded wage for technical labor, for example, is $\$33.25 \times (1 + 0.497 + 0.17) = \$33.25 \times (1.667) = \$55.44$.

Fully loaded costs for managerial and clerical labor were calculated in a similar manner.

Table A.1 Derivation of Loaded Wage Rates

Labor Category	Data Sources	Uninflated wages and fringes / hour			Fringe benefits as % of wage	Over-head as % of wage*	Fringe + Overhead factor	Loaded Wage Rate before inflation	Inflation factor	Loaded Wage Rate (2003 dollars)
		Date	Wages \$	Fringe benefits \$						
Technical	<i>BLS Employer Costs for Employee Compensation</i> . Private industry, goods-producing industries, Profess. specialty & technical . Dec 03. [BLS, 2008]	Dec 2007	\$33.25	\$16.54	49.7%	17%	1.667	\$55.44	1	\$55.44
Managerial	<i>BLS Employer Costs for Employee Compensation</i> . Private industry, goods-producing industries, Exec, admin, & managerial . Dec 03. [BLS, 2008]	Dec 2007	\$41.40	\$19.74	47.7%	17%	1.647	\$68.18	1	\$68.18
Clerical	<i>BLS Employer Costs for Employee Compensation</i> . Private industry, goods-producing industries, Admin support, incl. clerical . Dec 03. [BLS, 2008]	Dec 2007	\$16.40	\$8.28	50.5%	17%	1.675	\$27.47	1	\$27.47

*An overhead rate of 17 percent applied to wages is used for consistency with recent EPAB economic analyses for two major rulemakings: *Wage Rates for Economic Analyses of the Toxics Release Inventory Program*, June 10, 2002, and the *Revised Economic Analysis for the Amended Inventory Update Rule: Final Report*, August 2002.

Note: Calculations are based on unrounded values, so the total may not equal the product of the rounded factors.

³ An overhead rate of 17 percent applied to wages is used for consistency with recent EPAB economic analyses for two major rulemakings: *Wage Rates for Economic Analyses of the Toxics Release Inventory Program*, June 10, 2002, and the *Revised Economic Analysis for the Amended Inventory Update Rule: Final Report*, August 2002. In reports for an earlier SNUR (EPAB, 1999), the 17% was applied to wages-plus-fringe benefits. Applying it only to wages reduces calculated overhead.

A.2. Derivation of Inflation Factors

In general, wages were inflated using the appropriate Employment Cost Index (ECI), seasonally adjusted. Complete information on the derivation of the inflation factors used is given in Table A.2 below.

Table A.2 Derivation of Inflation Factors

Report section	Item	Inflator data source	Starting year	Inflator for starting year (A)	Inflator for 2003 (B)	Inflation factor (B) / (A)
Section 3	Export notification	BLS Employ. Cost Index, Seas. Adj., White Collar Occupations Series ECS11102I, Fourth Q, 1992	1992	63.2	103.6	1.639
Appendix C	Agency Extramural costs	BLS Employ. Cost Index, Seas. Adj., White Collar Occupations Series ECS11102I, Fourth Q, 1993	1993	65.5	103.6	163.1

APPENDIX B: AGENCY COSTS

EPA's costs to review and process industry submissions (SNUNs, requests to modify SNUR, and requests for equivalency determination) are assumed to be the same as EPA costs to review PMNs. EPA's costs associated with SNUR submissions are presented in Table B.1. The EPA staff level (GS-12), staff-year full-time equivalents (FTEs) and extramural costs such as costs for contractor support are derived from the costs estimated for processing PMN submissions (RIB, 1994). The percent of cases are from RIB 1994 and from a 1999 SNUR economic analysis (EPAB, 1999). FTE costs have been calculated using 2007 GS-12 salary data (OPM, 2008) and a loading factor of 1.6 to reflect fringe benefits and overhead (OPPE, 1992).

The original PMN cost estimates were presented as low and high estimates, based on the most junior (Step 1) and the most senior (Step 10) GS-12 pay rates, respectively. For simplicity, this analysis uses the average of the two pay rates.

The GS-12 costs in the table below are calculated by multiplying the number of FTEs (in the first column) by the fully loaded average salary, \$122,854. This shows EPA staff cost for those chemicals requiring this review step. The Extramural Cost column shows costs for contractor support and other outside purchases for those chemicals requiring this review step, inflated from 1993 prices to 2007 using the Employment Cost Index, Total Compensation for White-Collar Occupations (BLS, 2008a). The Weighted Cost column is calculated by multiplying GS-12 staff cost plus extramural costs (Unweighted Cost) by the percentage of cases requiring this review step. This calculation yields total Agency costs for submission review and processing of \$4,203 per case.

Table B.1 Agency Costs for SNUN and Other Submission Review and Processing

Review Step	EPA FTE (1)	EPA staff (GS-12) ^(a) (2)	Extra-mural Cost		Unweighted Cost (5)=(2)+(4)	Pct. of Cases (6)	Weighted Cost (7)=(5)*(6)
			1993 dollars (3)	2007 dollars ^(b) (4)			
Prenotice consultation	0.0024	\$294.85	4	\$6.32	\$301.17	41%	\$123.48
Administrative prescreen/notice receipt/user fee	0.0024	\$294.85	92	\$145.54	\$440.39	100%	\$440.39
CRSS (Chemical Review and Search Strategy)	0.0025	\$307.14	268	\$423.98	\$731.12	100%	\$731.127
SAT (Structure Activity Team)	0.0006	\$73.71	14	\$22.15	\$95.86	100%	\$95.86
Engineering/Exposure	0.0015	\$184.28	56	\$88.59	\$272.87	100%	\$272.87
Exposure/Fate	0.0008	\$98.28	0	\$0.00	\$98.28	100%	\$98.28
Focus	0.0009	\$98.28	23	\$36.39	\$134.67	100%	\$134.67
Standard Review Functions	0.0219	\$2,690.50	511	\$808.40	\$3,498.90	29%	\$1,014.6896
Division Directors Meeting	0.0129	\$1,584.82	113	\$179.22	\$1,764.04	15%	\$264.614
Order Development/Negotiation Review	0.0171	\$2,100.80	22	\$34.80	\$2,135.60	3%	\$64.07
Post Order Data Review	0.0886	\$10,884.86	0	\$0.00	\$10,844.86	3%	\$326.55
Order Modification	0.2167	26,622.46	0	\$0.00	\$26,622.46	3%	\$798.67
New Chemical SNUR Development	0.0277	\$3,403.06	85	\$134.67	\$3,537.53	7%	\$247.671
Notices of Commencement	0.0012	\$147.42	40	\$63.28	\$210.70	31%	\$65.32
FOIA (Freedom of Information Act) Requests	0.0333	\$4,091.04	287	\$454.03	\$4,545.07	1%	\$45.45
CBI (Confidential Business Information) Substantiation	0.0004	\$49.14	3	\$4.75	\$47.04	100%	\$53.89
TOTAL							\$4,778

Sources: FTEs per review step and 1993 extramural costs are from RIB 1994. Percents of cases are from RIB, 1994 and EPAB, 1999. GS-12 salaries are from OPM, 2008.

(a) The average of GS-12 Step 1 and GS-12 Step 10 salaries for 2007 was $(\$66,767 + \$86,801) / 2 = \$76,784$. This was multiplied by an assumed loading factor of 1.6 to reflect fringe benefits and overhead, resulting in a fully loaded cost per FTE of $1.6 \times \$76,784 = \$122,854$.

(b) Extramural costs consist of contracting support and other purchases directly attributable to the PMN review process. They were inflated from 1993 prices to 2007 prices using a factor of 1.433 (see Appendix A).