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Record Type: Record

To: Lorraine D. Hunt OIRA BC RPT/OMB/EOP@EOP

cc:

Subject: Comments on 2003 Draft Guidelines

Dear Ms. Hunt,  
Herewith please find my comments on the Draft 2003 Report of Congress on the Costs and Benefits of Federal Regulations. I have attached both Word 2000 and PDF formats for your convenience. The content is identical on both documents.

Sincerely yours,  
Dagmar Etkin

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Specializing in:

Comprehensive International Oil and Chemical Spill Databases  
Spill Data Analysis/Risk Assessment  
Spill Response/Damage Cost Modeling and Analysis  
Ecological Risk Assessment and Research

- ETKINCommentsonOMBDraft20003ReporttoCongress.doc
- ETKINCommentsonOMBDraft20003ReporttoCongress.pdf



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30 April 2003

Lorraine Hunt  
Office of Information and Regulatory Affairs  
Office of Management and Budget  
NEOB, Room 10202, 725 17<sup>th</sup> Street NW  
Washington, DC 20503

**RE: COMMENTS on *Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulation* (Federal Register Vol. 68, No. 22: pp. 5,492 – 5,527)**

Dear Ms. Hunt,

As a researcher and author on oil spill costs for the last 15 years, as well as a consultant to the US Coast Guard (USCG), the Environmental Protection Agency, Minerals Management Services, the United Nations, International Maritime Organization, and other US and international organizations on oil spill cost issues for the last decade [see attached], I feel qualified to comment authoritatively on several points regarding the value of “oil spills prevented” used in the cost-benefit analyses presented in the *Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulations*.

My comments are specifically related to:

- 1.) Appendix A Table 7 (*Federal Register* Vol. 68, No. 22: pp. 5,499 – 5,500) lines regarding “Vessel Response Plans” and “Double-Hull Standards”**
- 2.) Appendix B Table 9 (*Federal Register* Vol. 68, No. 22: p. 5,505) lines regarding “Response Plans for Marine Transportation-Related Facilities” and “Vessel Response Plans”**
- 3.) Appendix B Table 10 (*Federal Register* Vol. 68, No. 22: p. 5,509) lines regarding “Financial Responsibility for Water Pollution (Vessels)”**
- 4.) Appendix B Table 11 (*Federal Register* Vol. 68, No. 22: p. 5,512) lines regarding “Double Hull Standards for Vessels Carrying Oil in Bulk”**
- 5.) Appendix A section “Valuation Estimates for Regulatory Consequences” under “Injury” (*Federal Register* Vol. 68, No. 22: p. 5,501)**

Each of the benefits described in (1), (2), (3), and (4), are estimated based on a value of “oil not spilled” as a result of the relevant USCG rules. This value is designated as “\$2,000 per barrel of oil not spilled,” which is said to be derived from *doubling* an estimated cost of the environmental damages and cleanup costs published journal article, “The Economics of Double-Hulled

Tankers” in *Maritime Policy and Management*, Volume 23(2), pp. 167 – 175, as referenced in (5) above. The value of \$2,000 per barrel, which is the equivalent of just under \$48 per gallon is, in my judgment, a gross *underestimate* of the value of spilled oil. This underestimate in oil value costs in turn grossly *undervalues the benefits* of USCG’s Vessel Response Plan, Double-Hull Standards, Vessel Financial Responsibility, and Marine Transportation-Related Facility Response Plan rules.

My extensive research on oil spill costs (including response costs, environmental- and socioeconomic- damage costs) has shown that the costs vary considerably depending on key factors related to each spill incident, including oil type, location type, spill amount, environmental sensitivity, and socioeconomic value of impacted sites. **Employing a single cost per gallon or per barrel of oil spilled (or not spilled) is a very inaccurate and potentially misleading way to determine cost impacts of oil spills.** Response costs involve not only oil *removal* costs, but also costs for source control (salvage efforts to stop flow of oil), equipment and personnel mobilization, spill management, monitoring, protective exclusionary booming of sensitive sites, and logistics. The response costs for a minor spill of a few gallons or even the *threat* of a spill can be \$500,000 to \$1 million just to bring equipment and personnel on-scene. Response costs vary from as low as less than \$1 *per barrel* for an 828,000-gallon diesel fuel spill to as much as \$105,000 *per barrel* for a spill of heavy fuel oil 5,000 gallons with the potential to impact sensitive bird populations. Damage costs range from \$160 *per barrel* to \$7,000 *per barrel* for environmental damages and \$2,500 *per barrel* to \$80,000 *per barrel* for socioeconomic damages, based on a damage cost model Environmental Research Consulting (ERC) developed for EPA and cost modeling ERC conducted for Army Corps of Engineers. There is also anecdotal evidence of even *higher* socioeconomic damage costs, when longer-term impacts are taken into consideration. The costs for environmental and socioeconomic damages depend on location type and value as well as oil type. **Total cost for a barrel of spilled oil can thus vary from about \$2,700 per barrel to as much as \$190,000 per barrel.**

A *comprehensive* analysis of costs of avoided spills would require application of the appropriate modeled costs for each potentially avoided spill from tankers, other vessels, and marine transportation-related facilities. A less rigorous but quicker method would be to apply a “midpoint” (arithmetic mean) cost of this range of costs - \$96,000 per barrel spilled. This estimation likely underestimates the true mean cost for all spills. In reality, the higher end of costs is more likely to hold true in the more frequent smaller spills, particularly those of heavy fuel oils and other persistent oils, making an estimate of **\$120,000 per barrel spilled** a more appropriate value to be applied.

**Applying the \$120,000 per barrel-spilled value increases the benefits of USCG rules sixty-fold.** There are also considerable additional costs for maintaining equipment stockpiles and personnel in a state of constant preparedness for potential oil spill responses. These costs are not factored into the estimated per-barrel cost and would make the benefits even greater.

A recalculation of the benefits and benefit-to-cost ratios based on the \$120,000-per barrel cost of avoided spills is shown in the table below.

Recalculation of Benefits of USCG Rules Based on \$120,000 Per-Barrel Cost of Spilled Oil						
US Coast Guard Rule	Millions of Dollars			Benefit:Cost Ratio		2003 Draft Guidelines <i>Federal Register</i> Citation
	Original Benefit	Recalculated Benefit	Cost	Original	Recalculated	
Vessel Response Plan	8	480	324	0.02	1.48	Appendix A Table 7 pp. 5,499 – 5,500
Double-Hull Standards	15	900	641	0.02	1.40	Appendix A Table 7 pp. 5,499 – 5,500
Marine Transportation Facility Response Plan (USCG estimate)	117.7*	7,060*	176	0.67	40.09	Appendix B Table 9 p. 5,505
Vessel Response Plan (USCG estimate)	100.6*	6,037*	3,245	0.02	1.86	Appendix B Table 9): p. 5,505
Vessel Financial Responsibility (USCG estimate)	1,050.6*	63,038*	451	2.33	139.77	Appendix B Table 10 p. 5,509
Double Hull Standards (USCG estimate)	189.4*	11,184*	6,413	0.03	1.74	Appendix B Table 10 p. 5,509

\*Based on USCG estimates of barrels of oil *not* spilled with \$2,000 per barrel (original) and \$120,000 per barrel (recalculated) costs applied. Analysis by Dagmar Schmidt Etkin., Environmental Research Consulting

I believe that it is imperative that the benefits of the USCG's rules aimed at oil spill prevention and preparedness be recalculated using a considerably higher cost value for unspilled oil, such as demonstrated here or using a more comprehensive modeling of the potential types of spills that would be avoided by the various rules. This will provide a more accurate picture of the benefits of these spill-prevention rules.

Effective oil spill prevention and preparedness is essential to the US public. **The benefits of spill prevention go beyond dollars saved on spill response and damages.** The public has been vocally critical of the US government as well as industry every time an oil spill occurs in the US. The demand for effective prevention and response preparedness for future oil spills is significant.

The impact of past spill prevention efforts is demonstrated by the fact that **less oil is spilled in the US now despite an increase in oil transportation and handling** (studies conducted by ERC for USCG, National Academy of Sciences, and UN). The benefits of proper response preparedness and more effective response tools have also been shown. **If the Exxon Valdez oil spill occurred today, the response costs and damages (in current dollar values) would be reduced by nearly half for a savings of \$6.52 billion.** And the Exxon Valdez spill was not even a worst-case discharge. It only discharged one-sixth of its cargo.

Respectfully yours,  
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## **CURRICULUM VITAE**

### **EDUCATION**

**Ph.D. Organismic and Evolutionary Biology, Harvard University, 1982**

(specialized in population biology, ecology, evolutionary theory, and statistical analysis)

**A.M. Biology, Harvard University, 1980**

**B.A. Biology (with Honors), University of Rochester, 1977**

### **PROFESSIONAL EXPERIENCE**

Dr. Etkin has 29 years of experience in environmental analysis – 14 years investigating issues in population biology and ecological systems, and 15 years specializing in the analysis of oil spill impacts, particularly in the areas of risk analysis, environmental risk assessment, spill statistics, and spill response and damage cost modeling and analysis. Dr. Etkin has consulted with government and industry on oil spill data analysis, spill costs, and environmental and cost risk analysis. She has often served as an expert witness in cases involving oil spill risk and costs. In 1999, she established Environmental Research Consulting, a small, independent woman-owned consulting firm, specializing in data analysis, environmental risk assessment, cost analyses, and development of comprehensive databases on oil/chemical spill incidents and spill costs.

### **POSITIONS HELD**

**Independent Environmental Consultant (1999 – present)**

*Environmental Research Consulting, Winchester, Massachusetts*

**Senior Research Analyst/Consultant (1989 – 1999)**

*Cutter Information Corp./Oil Spill Intelligence Report, Arlington, Massachusetts*

**Oil Spill Data Analysis Expert (1997 – present)**

*Joint Group Experts on Scientific Aspects of Marine Protection, London, UK*

**Oil Spill Researcher/Data Analyst (1982)**

*World Information Systems, Cambridge, Massachusetts*

### **RECENT RESEARCH AND CONSULTING PROJECTS ON OIL SPILL COSTS**

- **Cost-Benefit Analysis of US Environmental Protection Agency's Oil Program (US EPA and Abt Associates) – current**

Dr. Etkin conducted an analysis of the US EPA's Oil Program, examining benefits of preventing and increasing response effectiveness to oil spills, as well as an examination of the costs and

benefits to society and industry from oil spills and prevention regulations. The project is for the purpose of evaluating the benefits and justifying the costs of the EPA Oil Program.

- **Development of Model to Estimate Damages From Oil Spills**

*(US EPA and Abt Associates)* – current

Dr. Etkin developed a basic model to estimate damages, including response costs, natural resource damage costs, and socioeconomic costs, for oil spills by oil type, spill volume, and location type for use in evaluating EPA Oil Program activities and regulations.

- **Cost-Benefit Analysis of US Coast Guard Oil Spill Research & Development Program**

*(US Coast Guard and Potomac Management Group)* - current

Dr. Etkin conducted a cost-benefit analysis of improvements in oil spill response technology to determine cost and damage reductions by alternative response technologies and improvements in traditional technologies.

- **Development of Oil Spill Response Cost-Effectiveness Analytical Tool**

*(National Oceanic & Atmospheric Administration/Univ. of New Hampshire Cooperative Institute for Coastal and Estuarine Environmental Technology - CICEET)* - current

Dr. Etkin received a prestigious two-year grant to research and develop a set of *decision-making tools* for determining the *cost-effectiveness of various oil spill cleanup response options* in order better facilitate short-term and long-term environmental recovery of oil-impacted areas. The tools will be comprised of algorithms and analytical methodologies incorporated into a user-friendly computer software program and a pencil-paper-and-calculator protocols applicable to on site or off-site response or restoration planning.

- **Oil Spill Risk Assessment and Analysis**

*(US Coast Guard w/Potomac Management Group)*

Dr. Etkin provided risk analysis services, oil spill incident and cost data, and reviewed a large number of projects for the US Coast Guard Oil Spill Prevention, Preparedness, and Response Program Broad Risk Assessment Project that is aimed at providing information to the US Coast Guard for strategic planning for the next decade.

- **Oil Spill Response Cost Modeling and Estimation**

*(US Maritime Administration)*

Dr. Etkin prepared oil spill response cost modeling for the Maritime Administration for hypothetical spill scenarios related to the reserve fleet in the James River, Virginia, USA.

- **Oil Spill Risk Assessment and Response and Damage Cost Analysis**

*(US Army Corps of Engineers)*

Dr. Etkin conducted an oil spill and vessel accident risk analysis for the US Army Corps of Engineers project of rock removal in the vicinity of Alcatraz Island, San Francisco Bay. She collaborated in this project with Herbert Engineering, Inc., of Alameda, California. In addition, she teamed with Applied Science Associates, of Narragansett, Rhode Island, in estimating response and socioeconomic damage costs associated with hypothetical oil spill scenarios as modeled by ASA's SIMAP oil spill trajectory and natural resource damage modeling program.

- **Response Cost Estimation Modeling for US Coast Guard Evaluation of Tanker Designs**

*(National Academy of Sciences/National Research Council Transportation Research Board)*

Dr. Etkin developed a methodology for use by the US Coast Guard to estimate the cost of mechanical recovery and shoreline cleanup for various oil spill scenarios (different locations, spill sizes, and oil types). The model will be used in evaluating the cost consequences of oil spills of various sizes from alternative tanker designs.

## **OIL SPILL COST- AND SPILL RESPONSE-RELATED PUBLICATIONS**

- Etkin, D.S. 1990. *Cold Water Oil Spills*, Cutter Information Corp., Arlington, MA, USA, 61 pp.
- Etkin, D.S. 1994. *Financial Costs of Oil Spills*, Cutter Information Corp., Arlington, MA, USA, 254 pp.
- Etkin, D.S. 1994. *The Oil Spill Intelligence Report Reference Guide*, Cutter Information Corp., Arlington, MA, USA, 28 pp.
- Etkin, D.S. 1996. *Case Study: The Morris J. Berman Oil Spill*, Cutter Information Corp., Arlington, MA, USA, 135 pp.
- Etkin, D.S. 1998. *Financial Costs of Oil Spills in the United States*, Cutter Information Corp., Arlington, MA, USA, 346 pp.
- Etkin, D.S. 1998. *Financial Costs of Oil Spills Worldwide*, Cutter Information Corp., Arlington, MA, USA, 368 pp.
- Etkin, D.S. 1998. Oil spill cleanup costs. *Proceedings of Oil Spill Response '98 (Singapore)*, May 1998.
- Etkin, D.S. 1998. The costs of cleanup for port oil spills. *Port Technology International*. Volume 8: pp. 237-242. ICG Publishing Ltd., London, UK.
- Etkin, D.S. 1999. Estimating cleanup costs for oil spills. *Proceedings of the 1999 International Oil Spill Conference*: pp. 35-39.
- Etkin, D.S. 1999. *Oil Spill Dispersants: From Technology to Policy*, Cutter Information Corp., Arlington, MA, USA. 305 pp.
- Etkin, D.S. 1999. *Oil Spill Response Reference Guide*, Cutter Information Corp., Arlington, MA, USA, 70 pp.
- Etkin, D.S. 2000. Worldwide analysis of oil spill cleanup cost factors. *Proceedings of the 23<sup>rd</sup> Arctic and Marine Oilspill Program Technical Seminar*: pp. 161-174.
- Etkin, D.S. 2001. Comparative methodologies for estimating on-water response costs for marine oil spills. *Proceedings of the 2001 International Oil Spill Conference*: pp. 1,281-1,289.
- Etkin, D.S. 2001. Methodologies for estimating shoreline cleanup costs. *Proceedings of the 24th Arctic and Marine Oilspill Program Technical Seminar*: pp. 647-670.
- Etkin, D.S. 2003. Estimation of shoreline response cost factors. *Proceedings of the 2003 International Oil Spill Conference*: in press.
- Etkin, D.S. and P. Tebeau, P. 2003. Assessing progress and benefits of oil spill response technology development since Exxon Valdez. *Proceedings of the 2003 International Oil Spill Conference*: in press.
- Etkin, D.S., and D. French McCay. 2003. Financial implications of hypothetical San Francisco bay oil spill scenarios: Response, socioeconomic, and natural resource damage costs. *Proceedings of the 2003 International Oil Spill Conference*: in press.
- Etkin, D.S., D. French-McCay, N. Whittier, S. Sankaranarayanan, and J. Jennings 2002. Modeling of response, socioeconomic, and natural resource damage costs for hypothetical oil spill scenarios in San Francisco Bay. *Proceedings of the 25th Arctic and Marine Oilspill Program Technical Seminar*: 1,075 – 1,102.
- French-McCay, D., N. Whittier, S. Sankaranarayanan, J. Jennings, and D.S. Etkin. 2002. Modeling fates and impacts for bio-economic analysis of hypothetical oil spill scenarios in San Francisco Bay. *Proceedings of the 25th Arctic and Marine Oilspill Program Technical Seminar*: pp. 1,051 – 1,074.