

# **DOCKET A-2001-11**

## **Control of Emissions of Air Pollution From New Marine Compression-Ignition Engines At or Above 30 Liters Per Cylinder**

### **Subject Matter**

- I. Notice of Intent or ANPRM (If any)**
- II. Items Considered in Developing Proposal**
- III. Proposal**
- IV. Additional Items Considered After Proposal in Developing Final Rule**
- V. Final Action**

**Docket: A-2001-11**

**Control of Emissions of Air Pollution From New Marine  
Compression-Ignition Engines at or Above 30 Liters per Cylinder**

**Category: II-A  
EPA Studies and Contractor Reports**

<u>Document Number</u>	<u>Date Rcvd in Docket</u>	<u>Commentor, Addressee, Title or Description, etc.</u>	<u>Date of Document</u>
II-A-01	01-15-02	“Exhaust Emissions: Next Steps for Low-Speed Two-Stroke Engines”, Marine News	2000
II-A-02	02-26-02	“The New Low-Emission Heavy Fuel Oil Engines of Caterpillar Motoren”, U. Schlemmer-Kelling, New Technology Introduction, and M. Rautenstrach, Research & Development, Caterpillar Motoren GmbH & Co, KG; CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	2001
II-A-03	02-26-02	“Advanced Optimisation of Common-Rail Diesel Engine Combustion”; Chr. Philipp, Dr. A. Schneemann, Dr. M. Willmann, Dr. M. Kurreck; MTU Motoren-und Turbinen-Union Friedrichshafen GmbH; CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	2001
II-A-04	02-26-02	“The Development of Very Low Fuel Consumption Medium Speed Diesel Engine”, S. Okada, et. al; Yanmar Diesel Engine, Company, Ltd., CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	2001
II-A-05	02-26-02	“Improving the Soot-NOx-BSFC Trade-Off Of Medium Speed, 4-Stroke Diesel Engine; Dr.-Ing I. G. Heider, Basic Development & Dr.-Ing I.P. Eilts, Head of Department; MAN B&W Diesel Aktiengesellschaft, Augsburg, Germany; CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	2001

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II-A-06	02-26-02	“Development of ‘NEO’ Medium Speed Diesel Engines”, T. Sato, et.al., Niigata Engineering Company, Ltd.; CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	2001
II-A-07	02-26-02	“The Sulzer RTA-Low Speed Engine Range: Today and in the Future”, K. Aeberli, Senior Vice President, Technology; & N. Mikulicic, Vice President, Technology, Wartsila Switzerland Ltd.; Winterthur, Switzerland; CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	2001
II-A-08	02-26-02	“Assessment of Emission Control Technology For EPA Category 3 Commercial Marine Diesel Engines”, M.N. Ingalls & S.G. Fritz, Southwest Research Institute, San Antonio, TX (Final Report)	09-01
II-A-09	02-22-02	“Economic Instruments for Reducing Emissions From Sea Transport”, P. Kageson, The Swedish NGO Secretariat on Acid Rain; European Federation For Transport & Environment; European Environmental Bureau	1999
II-A-10	02-22-02	Brochure “Do Your Part to Improve Air Quality”, Smoke Stack Emissions Program; The Port of Long Beach, CA	Undated
II-A-11	02-22-02	Rule 401, Visible Emissions; South Coast Air Quality Management District, CA	11-09-01
II-A-12	02-22-02	Ports of Los Angeles & Long Beach Navigational Alert	2001
II-A-13	02-26-02	“Development of the Sustainable Engine”, D. Paro, Senior Vice President, Wartsila Corporation, Vaasa, Finland; CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	2001

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II-A-14	03-04-02	<p>“Fuel Injection System &amp; Control Integration”, M.E. Moncelle, New Technology Introduction Manager, Catepillar, Peoria, IL; CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany</p> <p><b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b></p>	2001
II-A-15	03-04-02	<p>“The Intelligent Engine Design Status and Service Experience”, P. Sorensen, Senior Manager, Electronics &amp; Software, Research &amp; Development, &amp; P. Sunn Pedersen, Vice President, Research &amp; Development, MAN B&amp;W Diesel A/S, Denmark; CIMAC, International Council on Combustion Engines, Congress 2001; Hamburg, Germany</p> <p><b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b></p>	2001
II-A-16	03-11-02	<p>“Prevention of Air Pollution From Ships; Revision of the NOx Technical Code Tiers 2 Emission Limits for Diesel Marine Engines At or Above 130 kW”, (MEPC44/11/7); Submitted by the U.S.; Marine Environment Protection Committee; 44<sup>th</sup> Session; Agenda Item 11, International Maritime Organization (IMO)</p>	12-24-99
II-A-17	03-11-02	<p>Davies, M.E., et.al., “Study on the Economic, Legal, Environmental and Practical Implication of a European Union System To Reduce Ship Emissions of SO2 and NOx”; Final Report for European Commission Contract B4-3040/98/000839/MAR/B1; BMT Murray Fenton Edon Liddiard Vince Ltd.;</p> <p>*Also available at website: <a href="http://www.europa.eu.int/comm/environment/air/transport.htm#3">http://www.europa.eu.int/comm/environment/air/transport.htm#3</a></p>	08-2000
II-A-18	03-11-02	<p>Dr. J.J. Richardson, et.al., “Maritech Program Impacts On Global Competitiveness of the U.S. Shipbuilding Industry and Navy Ship Construction”; A Potomac Institute for Policy Studies Report: PIPS-98-4</p>	07-01-98

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II-A-19	03-11-02	P. Koman, Environmental Scientist, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA; "Manufacturer Information Regarding Category 3 Marine Diesel Vessel Prices, Production, Employment & Sales Information"	02-22-02
II-A-20	03-11-02	J.M. Revelt, EPS, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA; "Incorporation by Reference Rulemaking Dockets A-92-28 & A-97-50"	03-06-02
II-A-21	03-11-02	International Council of Cruise Lines (ICCL) Industry Standard E-01-01 (Revision 1), "Cruise Industry Waste Management Practices & Procedures"	12-01-01
II-A-22	03-11-02	U.S. General Accounting Office (GAO), Report to Congressional Requesters; "Marine Pollution: Progress Made to Reduce Marine Pollution By Cruise Ships, But Important Issues Remain"; (GAO/RCED-00-48)	02-2000
II-A-23	03-11-02	Emission Standards Division (ESD), Office of Air & Radiation (OAR), U.S. EPA; "Surface Coating Operations at Shipbuilding & Ship Repair Facilities-- Background Information for Proposed Standards" EPA 453-D-94-011a	06-24-94
II-A-24	03-11-02	U.S. Census Bureau, 1997 Economic Census, Manufacturing-Industry Series; "Introduction to the Economic Census"	1997
II-A-25	03-11-02	J.M. Revelt, EPS, Assessment & Standard Division (ASD), Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U. S. EPA; Industry Information, Chamber of Shipping of America Tele-Conference, 11-01-01	03-06-02
II-A-26	03-11-02	American Shipbuilding Association, "The Defense Shipbuilding Industrial Base-An Industry At Risk"	05-2001
II-A-27	03-11-02	F. Losey, American Shipbuilding Association, Re: International Shipbuilding Aid	12-20-01

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II-A-28	03-11-02	European Commission, Directorate-General for Environment; Directorate C-Environment & Health; Unit C1-Air & Noise; "Discussion Paper: A Community Strategy on Air Pollution From Seagoing Ships"; Brussels, Belgium Also available at web site: <a href="http://europa.eu.int/environment/air/0101discussionpaper.pdf">http://europa.eu.int/environment/air/0101discussionpaper.pdf</a>	01-2001
II-A-29	03-15-02	Corning's Clean Diesel Workshop Agenda; Sept.27-29, 1999, Corning, New York	09-99
II-A-30	03-15-02	International Petroleum Information, U.S. Energy Information Administration, U.S. Department of Energy (DOE) Also available at website: <a href="http://www.eid.doe.gov/emeu/international/petroleu.html">http://www.eid.doe.gov/emeu/international/petroleu.html</a>	Undated
II-A-31	03-15-02	"Bunker Prices", from web site <a href="http://www.BunkerNews.com">http://www.BunkerNews.com</a>	01-24-01
II-A-32	03-15-02	Wolcott, D.C., et.al; Committee on Oil Pollution Act of 1990 (Section 4115) Implementation Review, Marine Board, Commission on Engineering & Technical Systems, National Research Council, National Academy Press, Washington, DC; "Double-Hull Tanker Legislation: An Assessment of the Oil Pollution Act of 1990" Also available at web site: <a href="http://www.nap.edu/readingroom/books/tanker/">http://www.nap.edu/readingroom/books/tanker/</a> <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	1998
II-A-33	03-15-02	G. Steinfeld, et.al; Energy Research Corporation, Danbury, CT; "Direct Carbonate Fuel Cell For Ship Service Application"	Undated
II-A-34	03-15-02	Z. Karni & P. Fontneau, John J. McMullen Associates, Inc., Alexandria, VA; S. Allen & R. Sedat, US Coast Guard R&D Center, Groton, CT; H. Ghezal-Ayagh, & et.al., FuelCell Energy, Inc., Danbury, CT; M.Lukas, Pennsylvania State University, University Park, PA; "Marine Application of Fuel Cells"	Undated

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II-A-35	03-15-02	The Society of Naval Architects and Marine Engineers; T & R News; "Fuel Cells For Commercial Ships"	Undated
II-A-36	03-15-02	C. Rosgren, V.P. Engine Design, Technology Division, Wartsila Corporation, Switzerland; The Ship Power Supplier; "Common Rail on Wartsila Four-Stroke Engines"	2001
II-A-37	03-15-02	S. Fankhauser, Manager, Engine Automation, & Project Manager Sulzer RT-flex; Wartsila, Switzerland Ltd; The Ship Power Supplier; "World's First Common-Rail Low-Speed Engine Goes To Sea"	2001
II-A-38	03-15-02	Z. Bazari, Lloyd's Register; B.A. French, Ford Motor Company; Society of Automotive Engineers (SAE) Technical Paper Series, 930592; "Performance and Emissions Trade-Offs for a HSDI Diesel Engine-An Optimization Study" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	Undated
II-A-39	03-15-02	M. Duernholz, FEV-Motorentechnik GmbH & Co., RG; Society of Automotive Engineers (SAE) Technical Paper Series, 920725; "Exhaust-Gas Recirculation-A Measure to Reduce Exhaust Emissions of DI Diesel Engines" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	Undated
II-A-40	03-15-02	M. Ghaffarpour & R. Baranescu, Navistar International Transportation Corp.; Society of Automotive Engineers (SAE) Technical Paper Series, 960845; International Congress & Exposition, Detroit, MI; February 26-29, 1996; "NOx Reduction Using Injection Rate Shaping and Intercooling in Diesel Engines" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	1996

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II-A-41	03-15-02	D.A. Pierpoint & R.D. Reitz, University of Wisconsin-Madison; Society of Automotive Engineers (SAE) Technical Paper Series, 950604; International Congress & Exposition, Detroit, MI; February 27-March 2, 1995; Reprinted from: Diesel Engine Combustion Process (SP-1092); "Effects of Injection Pressure and Nozzle Geometry on D.I. Diesel Emissions and Performance" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	1995
II-A-42	03-15-02	N. Uchida, Hino Motors Ltd; Y. Daisho & T. Saito, Waseda University; H. Sugano, Nippon Oil Company, Ltd; Society of Automotive Engineers (SAE) Technical Paper Series, 93061; "Combined Effects of EGR and Supercharging on Diesel Combustion and Emissions" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	Undated
II-A-43	03-15-02	D.T. Montgomery, et.al., University of Wisconsin-Madison; Society of Automotive Engineers (SAE) Technical Paper Series, 960316, "Six-Mode Cycle Evaluation of the Effect of EGR and Multiple Injections on Particulate and NOx Emissions from D.I. Diesel Engine" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	1996
II-A-44	03-15-02	D.A. Pierpoint, et.al., University of Wisconsin-Madison; Society of Automotive Engineers (SAE) Technical Paper Series, 950217; International Congress and Exposition, Detroit, MI, February 27-March 2, 1995; "Reducing Particulate and NOx Using Multiple Injections and EGR in a D.I. Diesel" <b>*COPYRIGHTED L</b> <b>*CANNOT BE REPRODUCED</b>	1995
II-A-45	03-15-02	O. Uyehara, University of Wisconsin; Society of Automotive Engineers (SAE) Technical Paper Series, 920695; "Factors that Affect NOx and Particulates in Diesel Engine Exhaust-Part II" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	Undated



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II-A-46	03-15-02	P. Herzog, et.al., AVL LIST, GmbH, Graz, Austria; Society of Automotive Engineers (SAE) Technical Paper Series, 920470; International Congress & Exposition, Detroit, MI; "NOx Reduction Strategies for DI Diesel Engines" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	Undated
II-A-47	03-18-02	J.M. Revelt, Assessments & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA; Attachments: <i>Santa Barbara County Air Quality News</i> , Issue 62, July-August 2001; <i>Business Oriented Air Quality News</i> , July-August 2001; <i>The Need to Reduce Marine Shipping Emissions</i> , D. Allard, Director, & K. Patton, Division Manager, Santa Barbara County Air Pollution Control District, January 2002	07-01 01-02
II-A-48	03-22-01	<i>Diesel &amp; Gas Turbine Worldwide Catalog: 66<sup>th</sup> Annual Product &amp; Buyer's Guide For Engine Power Markets</i> ; Vol.66; p.2-47; Waukesha, WI; "2001 Basic Specifications Gasoline Engines" <b>*COPYRIGHTED</b> <b>*CANNOT BE REPRODUCED</b>	04-01
II-A-49	04-05-02	"Emission Factors for Compression Ignition Nonroad Engines Operated on No.2 Highway and Nonroad Diesel Fuel," Office of Mobile Sources, U.S. Environmental Protection Agency (EPA420-R-98-001)	03-98
II-A-50	04-12-02	"SHAPING THE COMBUSTION PROCESS BY UTILISATION OF HIGH PRESSURE INJECTION: Test Results and Calculations Concerning Improvements of Engine Economics By Reduction of Combustion Pressure;" H. Fiedler, President, FMC Kiel GmbH, Aken/Elbe, Germany; International Council on Combustion Engines, Congress 2001; Hamburg, Germany	2001

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II-A-51	04-29-02	"Incorporation of the 'Ozone and Carbon Monoxide 1997-1999 Air Quality Update' from EPA's Trends website into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-A-80)	04-26-02
II-A-52	04-29-02	"Incorporation of the 'Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information OAQPS Staff Paper; EPA-425/R-96-013' into Docket A-2001-11," J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-99-06, Items II-A-18, 19, 20, & 23)	04-26-02
II-A-53	04-29-02	"Incorporation of 'Air Quality Criteria for Ozone and Related Photochemical Oxidants, EPA/600/P-93/004aF' into Docket A-2001-11," J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-99-06, Items II-A-15, 16, & 17)	04-26-02
II-A-54	04-29-02	"Incorporation of 'Review of National Ambient Air Quality Standards for Ozone, Assessment of Scientific and Technical Information, OAQPS Staff Paper, EPA-452/R-96-007' into Docket A-2001-11," J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-99-06, Item II-A-22)	04-26-02

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II-A-55	04-29-02	"Incorporation the ' <i>Regulatory Impact Analysis: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, Document EPA420-R-00-026, December 2000</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-A-13)	04-26-02
II-A-56	04-29-02	"Incorporation of ' <i>Air Quality Criteria for Carbon Monoxide</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-A-29)	04-26-02
II-A-57	04-29-02	"Incorporation of ' <i>Human Health Benefits from Sulfate Reductions Under Title IV of the Clean Air Act Amendments</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-A-32)	04-26-02
II-A-58	04-29-02	"Incorporation of portions of the ' <i>National Air Quality and Emissions Trends Report, 1998, March 2000</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-A-63)	04-26-02
II-A-59	04-29-02	"Incorporation of portions of the ' <i>National Air Quality and Emissions Trends Report, 1999, EPA, 2001</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-A-64)	04-26-02

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II-A-60	04-29-02	"Incorporation of Carbon Monoxide Data from ' <i>National Air Quality and Emissions Trends Report, 1998, EPA, 2001</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-A-72)	04-26-02
II-A-61	04-29-02	"Incorporation of the ' <i>Summary of Absolute Modeled and Modeled-Adjusted Estimates of Fine Particulate Matter for Selected Years</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-B-14)	04-26-02
II-A-62	04-29-02	"Incorporation of the ' <i>Summary of Modeled-Adjusted Ambient Concentrations for Certain Levels of Ground-Level Ozone Over Prolonged Periods</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-B-13)	04-26-02
II-A-63	04-29-02	"Incorporation of the ' <i>Summary of 1999 Ambient Concentrations of Fine Particulate Matter</i> ' into Docket A-2001-11;" J. Mueller, Mechanical Engineer, Assessment & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA *(Docket A-2000-01, Item II-B-12)	04-26-02
II-A-64	04-29-02	"Analysis of Commercial Marine Vessels Emissions and Fuel Consumption Data, EPA420-R-00-002;" Office of Transportation & Air Quality, U.S. EPA; Prepared for EPA under contract to Sierra Research by Energy & Environmental Analysis, Inc., EPA Contract No. 68-C7-0051, Work Assignment No.1-10	02-2000

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II-A-65	04-29-02	"Commercial Marine Emissions Inventory for EPA Category 2 and 3 Compression Ignition Marine Engines in United States Continental and Inland Waterways;" Prepared by J. J. Corbett, Jr., et.al.; Department of Engineering & Public Policy, Carnegie-Mellon University, Pittsburg, PA; prepared for U.S. EPA, Office of Mobile Sources, Ann Arbor, MI; (Order No. 8A-0526-NATX)	08-21-98
II-A-66	04-30-02	"2001 Directory of Marine Diesel Engines," used as "Material Used in Industry Characterization," L. Wehrly, Mechanical Engineer, Assessment & Standards Division, Office of Transportation Air Quality, U.S. EPA	04-08-02
II-A-67	04-30-02	"Commercial Marine Emission Inventory Development, Final Report," Prepared for: Office Of Transportation Air Quality, U.S. EPA, Prepared by: E.H. Pechan & Associates, Springfield, VA; & ENVIRON International Corporation, Novato, CA (EPA Contract No. 68-D-00-265, Work Assignment 1-11, Pechan Report No. 02.04.002/9012.111) (Appendix A on computer disk)	04-2002
II-A-68	04-30-02	U.S. EPA <i>Federal Register</i> Notice "40 CFR Parts 80 & 86, Control of Emissions of Hazardous Air Pollutants From Mobile Sources; Final Rule" (Docket A-2000-12)	03-29-01
II-A-69	04-30-02	Docket A-2000-12 "Technical Support Document: Control of Emissions of Hazardous Air Pollutants From Motor Vehicles & Motor Vehicle Fuels," Assessment & Standards Division (ASD), Office of Transportation, U.S. EPA (EPA420-R-00-023)	12-2000
II-A-70	05-13-02	"Annual Analysis", Motorship.	06-99

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II-A-71	05-13-02	"A Review of Meteorological Studies Pertaining to Southern California Offshore Ship Emissions and Their Effect on the Mainland," L. Eddington, et. al.; Geophysics Branch, Test Operations Division, Naval Air Warfare Center, Weapons Division, Point Mugu, CA (Geophysical Sciences Technical Note No. 200)	02-97

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**EPA Factual Memoranda**

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II-B-01	03-11-02	J. Armstrong, Director, Vehicle Programs & Compliance Division (VPCD), Office of Air & Radiation, U.S. EPA; Re: "Guidance for Certifying to Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)", VPCD-99-02 (Marine) *Also available at website: <a href="http://www.epa.gov/otaq/regs/nonroad/marine/ci/imoletr.pdf">http://www.epa.gov/otaq/regs/nonroad/marine/ci/imoletr.pdf</a>	01-19-99
II-B-02	03-11-02	K. Schmidt, Campaign Director; R. Long, Executive Director, Bluewater Network; "Bluewater Network's Petition to EPA to Address Cruise Ship Pollution"	03-17-00
II-B-03	03-11-02	R. Long, Executive Director, K. Schmidt, Campaign Director; Bluewater Network; Re: "Addendum to Bluewater Network's March 17, 2000 Petition to Address Pollution by Cruise Ships"	08-02-00

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Category II -D: EPA Correspondence Received from Persons  
 Outside the Agency

<u>Document Number</u>	<u>Date Rcvd in Docket</u>	<u>Commentor, Addressee, Title or Description, etc.</u>	<u>Date of Document</u>
II-D-01	02-13-02	Dr. H. Mayer, EUROMOT, The European Association of Internal Combustion Engine Manufacturers, Frankfurt/Main, Germany to J. M. Revelt, Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA; "EUROMOT Reply to EPA Questionnaire For Engine Manufacturers Regarding Marine Diesel Engines Above 30 l/Cylinder"	01-31-02
II-D-02	04-24-02	J. R. Gladden, Staff Engineer, Core Technology, Lafayette Engine Center, Caterpillar, Inc.; to A. Stout, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), U.S. EPA; "Equation Forms for Emissions v. Displacement" & "Critical Issues for Emission Rules for Marine Engines >30 Liters/cylinder"	04-15-02
II-D-03	05-13-02	J.R, Gladden, Lafayette Engineer Center, Caterpillar Inc., Lafayette, IN; re: Critical Issues for Emissions Rules for Marine Engines >30 Liters/cylinder	03-11-02



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**Category II - E: EPA Memorandum of Meetings/Telephone**  
**Conversations with Outside Groups**

<u>Document Number</u>	<u>Date Rcvd in Docket</u>	<u>Commentor, Addressee, Title or Description, etc.</u>	<u>Date of Document</u>
II-E-01	05-13-02	Meeting between MAN B&W and U.S. EPA	03-06-02
II-E-02	05-13-02	1 <sup>st</sup> (03-02-01), 2 <sup>nd</sup> (07-02-01), 3 <sup>rd</sup> (10-31-01), 4 <sup>th</sup> (01-31-02) Meetings with Earth Land Institute, Pursuant to Settlement Agreement	various dates
II-E-03	05-13-02	Meeting with Office of General Counsel, Office of Management & Budget (OMB) with U.S. EPA	04-03-02
II-E-04	05-13-02	Meeting with Office of General Counsel, Office of Management & Budget (OMB) with U.S. EPA	04-17-02
II-E-05	05-13-02	Interagency Review Meeting with EPA representatives held on April 26, 2002	04-29-02
II-E-06	05-13-02	Interagency Review Meeting with EPA representatives held on April 22, 2002	04-29-02
II-E-07	05-13-02	Interagency Review Meeting with EPA representatives held on April 19, 2002	04-29-02
II-E-08	05-13-02	Interagency Review Meeting (OMB, Department of State, Department of Defense, U.S. Coast Guard, Department of Transportation) with U.S. EPA representatives	04-29-02
II-E-09	05-13-02	Marine Environment Protection Committee, 47 <sup>th</sup> Session, Agenda Item; "PREVENTION OF AIR POLLUTION FROM SHIPS: Sulphur Monitoring 2000," Submitted by the Netherlands; MEPC47/INF	05-2001

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**Category II -F: Interagency Review Material**

<u>Document Number</u>	<u>Date Rcvd in Docket</u>	<u>Commentor, Addressee, Title or Description, etc.</u>	<u>Date of Document</u>
II-F-01	05-13-02	Correspondence between U.S. EPA and U.S. Maritime Administration, re: EPA's C-3 Marine Draft Notice of Proposed Rulemaking (NPRM); J.M. Revelt, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA	04-30-02
II-F-02	05-13-02	Materials forwarded to U.S. EPA by U.S. Navy; Re: EPA's Cat-3 Rule (DOD Comment) Draft Notice of Proposed Rulemaking (NPRM); from A.D. Ling, Senior Counsel, Office of the Assistant Secretary of Navy (Installations & Environment) to J.M. Revelt, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA; et.al.	04-30-02
II-F-03	05-13-02	Materials forwarded to U.S. EPA by U.S. Coast Guard; Re: C3 Rule by Capt. J. Lantz, USCG, Chief, Design & Engineering Standards (G-MSE) to K. Simon, Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA	04-30-02
II-F-04	05-13-02	Materials forwarded to the U.S. EPA by U.S. Department of State (DOS), Office of Management & Budget (OMB) re: Draft of Notice of Proposed Rulemaking; J.M. Revelt, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA	04-30-02
II-F-05	05-13-02	Materials submitted to U.S. Department of State (DOS) re: Staff Draft; J.M. Revelt, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), U.S. EPA	04-26-02

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<u>Document Number</u>	<u>Date Rcvd in Docket</u>	<u>Commentor, Addressee, Title or Description, etc.</u>	<u>Date of Document</u>
II-F-06	05-13-02	Materials forwarded to K. Simon, Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA by M.F. Hayes, U.S. Department of State (DOS) re: Ratification of EPA Preamble and Fact Sheet (04-29-02) (OTAQ), U.S. EPA	04-29-02 04-30-02
II-F-07	05-13-02	Materials Submitted to Office of Management & Budget (OMB) from J.M. Revelt, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA re: "Comparison of Annex VI to the International Convention on the Prevention of Pollution from Ships and the Proposed Rule Compliance Provisions"	04-17-02 04-18-02
II-F-08	05-13-02	Materials Submitted by EPA to the Office of Management & Budget (OMB) re: "Revised Section III.C.2-Foreign Flag Vessels" (Draft)	04-26-02
II-F-09	05-13-02	Materials Submitted to K. Simon, J.M. Revelt, & A. Stout; Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA by E. Haxthausen, Office of Management & Budget (OMB) re: C-3 Marine Comments	04-23-02
II-F-10	05-13-02	Materials Submitted to K. Simon, J.M. Revelt, & A. Stout, Office of Transportation Air Quality (OTAQ), U.S. EPA by E. Haxthausen, Office of Information and Regulatory Affairs (OIRA), Office of Management & Budget (OMB) re: OMB's Comments on C-3 Marine Preamble (Sets 1-4)	04-22-02 04-23-02
II-F-11	05-13-02	Materials Forwarded to K. Simon, J.M. Revelt & A. Stout; Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA by E. Haxthausen, Office of Information and Regulatory Affairs (OIRA), Office of Management & Budget (OMB) re: Comments on C-3 Marine Preamble	04-22-02

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<u>Document Number</u>	<u>Date Rcvd in Docket</u>	<u>Commentor, Addressee, Title or Description, etc.</u>	<u>Date of Document</u>
II-F-12	05-13-02	Materials Submitted to EPA from E. Haxthausen, Office of Management & Budget (OMB) re: EPA C-3 Marine Rule; new language and update	04-26-02 04-27-02
II-F-13	05-13-02	E. Haxthausen, Natural Resources Branch, Office of Information & Regulatory Affairs (OIRA), Office of Management & Budget (OMB) to J.M. Revelt & K. Simon, Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA re: OMB's Comments Concerning EPA's April 24, 2002 Draft C-3 Marine Preamble	04-27-02
II-F-14	05-13-02	Materials Submitted to EPA from the Office of Management & Budget (OMB) re: OMB's Comments on EPA's C-3 Marine Preamble of April 24, 2002	04-28-02
II-F-15	05-13-02	E. Haxthausen, Natural Resources Branch, Office of Information & Regulatory Affairs (OIRA), Office of Management & Budget (OMB) to K. Simon, Office of Transportation Air Quality (OTAQ), U.S. EPA; re: Edits Concerning EPA's Draft C-3 Marine Preamble of April 29, 2002	04-29-02
II-F-16	05-13-02	Materials forwarded to K. Simon, Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA by E. Haxthausen, Office of Information & Regulatory Affairs (OIRA), Office of Management & Budget (OMB) re: OMB's Comments on EPA's C-3 Marine Preamble of April 29, 2002	04-29-02 04-30-02
II-F-17	05-13-02	Materials forwarded to K. Simon, Office of Transportation Air Quality (OTAQ), Office of Air & Radiation (OAR), U.S. EPA by E. Haxthausen, Office of Information & Regulatory Affairs (OIRA), Office of Management & Budget (OMB) re: OMB's Comments on EPA's Regulatory Support Document (RSD)	04-30-02

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<u>Document Number</u>	<u>Date Rcvd in Docket</u>	<u>Commentor, Addressee, Title or Description, etc.</u>	<u>Date of Document</u>
II-F-18	05-13-02	Documents forwarded to Office of Management & Budget (OMB) by J.M. Revelt, Assessments & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA; re: Drafts of Preamble, Regulations, & Regulatory Support Document (RSD) for the Control of Emissions from New Marine Compression-Ignition Engines at or Above 30 liters/cylinder	03-14-02 03-30-02
II-F-19	05-13-02	Documents forwarded to Office of Management & Budget (OMB) by J.M. Revelt, Assessments & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA; re: Drafts of Preamble, Regulations, & Regulatory Support Document (RSD) for the Control of Emissions from New Marine Compression-Ignition Engines at or Above 30 liters/cylinder	04-05-02
II-F-20	05-13-02	Documents forwarded to Office of Management & Budget (OMB) by J.M. Revelt, Assessments & Standards Division (ASD), Office of Transportation Air Quality, U.S. EPA; re: Draft C3 Marine Preamble	04-24-02



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Category III-B: Proposed Support Documents

<u>Document Number</u>	<u>Date Rcvd in Docket</u>	<u>Commentor, Addressee, Title or Description, etc</u>	<u>Date of Document</u>
III-B-01	04-12-02	"Estimated Economic Impact of New Emission Standards for Heavy-Duty On-Highway Engines," Assessments & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), U.S. Environmental Protection Agency; Prepared by Acurex Environmental Corporation (EPA Contract No. 68-C5-0010; Acurex Environmental Final Report FR-97-13) (EPA 420-R-97-009)	03-97
III-B-02	04-24-02	C. Caffrey, Assessment & Standards Division (ASD), Office of Transportation Air Quality (OTAQ), U.S. EPA; Reference Lists of Wartsila's DWI & Marine SCR Installations & Future Installations	04-24-02
III-B-03	05-13-02	"Draft Regulatory Support Document: Control of Emissions from Compression-Ignition Marine Diesel Engines At or Above 30 liters per cylinder;" U.S. EPA, Office of Air & Radiation, Office of Transportation Air Quality, Assessment & Standards Division	04-2002

