

Development of a Model Rule on Emissions from Distributed Resources

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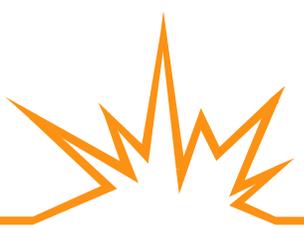


The Regulatory Assistance Project

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Purpose

- Recognizing the role of DR in existing and restructured electricity markets
- What concerns are being addressed?
 - Environmental protection with technology and industry changes
 - Promoting clean DR
 - Administrative simplicity
 - Promoting certification of small engine conformance to clean standards



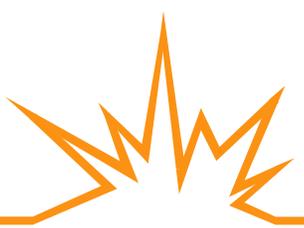
Who?

- A 30-member working group made up of state energy regulators, state and federal air quality regulators, manufacturers, interest groups (environmental and industry)
- Work done primarily by conference call and e-mail; two face-to-face meetings
- Agreement sought to the greatest extent possible



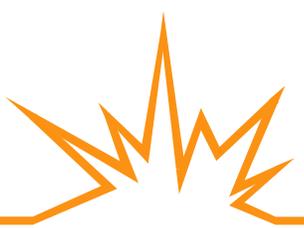
Timeline

- Kick-off meeting in January 2001
 - Issue areas (applicability, emissions, certification, credits for offsets) assigned to sub-groups
- May 2001 meeting
- November 2001 Public Review Draft
- Revisions, February through August 2002
- Final draft, 31 October 2002



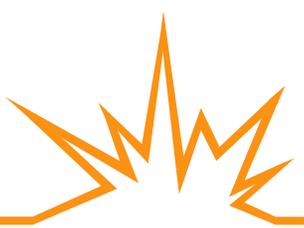
Principles Guiding Development of the Rule

- The model emissions standards should:
 - Lead to improved air quality, or at least do no additional harm
 - Be technology-neutral and fuel-neutral, to the extent possible
 - Promote regulatory consistency across states
 - Reduced barriers ► improved economic efficiency ► greater environmental benefit



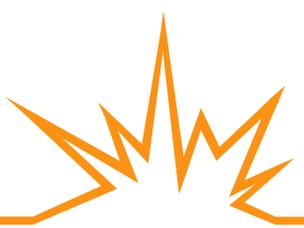
Principles Guiding Development of the Rule

- The model emissions standards should:
 - Promote technological improvements in efficiency and emissions output
 - Encourage the use of non-emitting resources
 - Account for the benefits of CHP and the use of otherwise flared gases
 - Be easy to administer
 - Facilitate the development, siting, and efficient use of DR



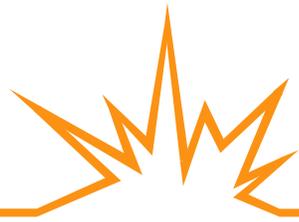
Key Issues: Applicability

- What types of sources should be covered?
 - New only
- What sizes of engines should be addressed?
 - Anything not covered by federal NSR
- What functions should be covered?
 - Emergency and non-emergency



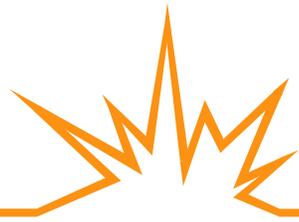
Key Issues: Emissions

- Establish “appropriate” emissions standards
 - Better than grid average, as good as new BACT for large combined cycle sources, LAER?
 - A middle ground that pushes technology to beat expected improvements over the next decade
- Credits for flared fuels, CHP, renewables and end-use efficiency
- Pollutants: NO_x , PM, CO, CO_2 , SO_2



Proposed Emissions Limits

- Emergency Generators
 - 300 hours annual operation
 - 50 hours annual maintenance (included in the 300 total)
 - EPA off-road engine standards, expressed in pounds/MWh



Proposed Emissions Limits

- For NO_x , PM, CO, CO_2 :
 - Output-based limits: pounds per MWh
- For SO_2 :
 - Diesel is the issue
 - Ultra-low sulfur fuel requirement
 - Following EPA on-road requirements
- Technology review prior to Phase Three



Proposed NO_x Limits (lbs/MWh)

Non-Emergency Generators

	Non-Attainment	Attainment
Phase I (2004)	0.6	4
Phase II (2008)	0.3	1.5
Phase III* (2012)	0.15	0.15

* Subject to Technology Review



Proposed PM Limits

Non-Gas only (lbs/MWh)

Non-Emergency, All Areas

Phase One (2004)	0.7
Phase Two (2008)	0.07
Phase Three* (2012)	0.03

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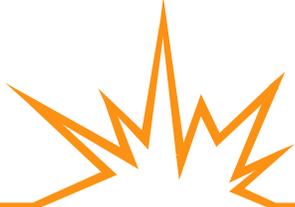
Proposed CO Limits

(lbs/MWh)

Non-Emergency, All Areas

Phase One (2004)	10.0
Phase Two (2008)	2.0
Phase Three* (2012)	1.0

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Proposed CO₂ Limits (lbs/MWh)

Emergency and Non-Emergency, All Areas

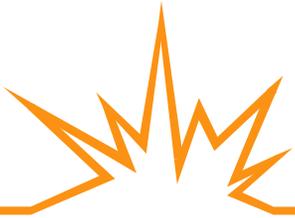
Phase One (2004)	1900
Phase Two (2008)	1900
Phase Three* (2012)	1650

* Subject to Technology Review



On-Going Activities

- 2003 – 2004:
 - Provide technical assistance to states considering adoption of DR emissions standards and removal of regulatory barriers to DR



More on Distributed Resources

- ***Model Regulations for the Output of Specified Air Emissions from Smaller-Scale Electric Generation Resources – Model Rule and Technical Support Documents;*** RAP, 31 October 2003
- ***State Regulatory Policy and Distributed Resources: Accommodating Distributed Resources in Wholesale Markets;*** F. Weston with C. Harrington, D. Moskovitz, W. Shirley, R. Cowart, and R. Sedano; T. Basso, NREL Technical Monitor, NREL TP-32497
- ***State Regulatory Policy and Distributed Resources: Distributed Resources and Electric System Reliability;*** R. Cowart with C. Harrington, D. Moskovitz, W. Shirley, F. Weston, and R. Sedano; T. Basso, NREL Technical Monitor, NREL TP-32498
- ***State Regulatory Policy and Distributed Resources: Distributed Resource Distribution Credit Pilot Programs: Revealing the Value to Consumers and Vendors;*** D. Moskovitz with C. Harrington, W. Shirley, R. Cowart, R. Sedano, and F. Weston; T. Basso, NREL Technical Monitor, NREL TP -32499
- ***State Regulatory Policy and Distributed Resources: Distribution System Cost and Methodologies for Distributed Generation;*** W. Shirley with R. Cowart, R. Sedano, F. Weston, C. Harrington, and D. Moskovitz; T. Basso, NREL Technical Monitor, NREL TP-32500
- ***State Regulatory Policy and Distributed Resources: Distribution System Cost Methodologies for Distributed Generation Volume II Appendices;*** W. Shirley with C. Harrington, D. Moskovitz, R. Cowart, R. Sedano, and F. Weston; T. Basso, NREL Technical Monitor, NREL TP-32501