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Climate Change Other Utilities [4]

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001. fax cover sheet	[Personally Identifiable Information] [partial] (1 page)	02/02/2000	b(6)

COLLECTION:

Clinton Presidential Records
Office of Environmental Initiatives
Roger Ballentine
OA/Box Number: 19512

FOLDER TITLE:

Climate Change Other Utilities [4]

2017-1093-F
rs3170

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P1 National Security Classified Information [(a)(1) of the PRA]
P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P3 Release would violate a Federal statute [(a)(3) of the PRA]
P4 Release would disclose trade secrets or confidential commercial or
financial information [(a)(4) of the PRA]
P5 Release would disclose confidential advice between the President
and his advisors, or between such advisors [(a)(5) of the PRA]
P6 Release would constitute a clearly unwarranted invasion of
personal privacy [(a)(6) of the PRA]

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2201(3).

RR. Document will be reviewed upon request.

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financial institutions [(b)(8) of the FOIA]
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2017-10638

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SUITE 500 EAST

WASHINGTON, D.C. 20005-3314

www.troutmansanders.com

Fax to
Elliott
Paul
George

FACSIMILE TRANSMITTAL

SENDER'S DIRECT DIAL NO.

202-274-2945

FACSIMILE NO.

202-274-2917

FLOOR

Date: November 16, 1999

To: Roger Ballentine

Operator: Cindy Hasson

Firm: Deputy Assistant to the President for
Environmental Initiatives

Recipient #: (202) 456-1782

Fax #: (202) 456-1736

From: Thomas C. Jensen

Subject: Wall Street Journal Article

Number of pages including this cover sheet = 3
If all pages are not received, please call 202-274-2946

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*** COMMENTS ***

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Utilities Seen At Legal Risk From Climate Change Program

WASHINGTON — Utilities that take voluntary actions to reduce greenhouse gas emissions under a U.S. government program may be at risk of incurring civil and criminal sanctions under the Clean Air Act, an industry attorney told the White House Friday.

The Nov. 12 letter to Roger Ballentine, deputy assistant to the president for environmental initiatives, follows on the heels of a recent enforcement initiative by the U.S. Environmental Protection Agency.

On Nov. 3, EPA announced it had filed suit against seven major utilities charging them with making illegal modifications to their power plants under the Clean Air Act's new source performance review program.

The modifications, which the utilities maintain are nothing more than routine maintenance and repairs, made the power plants subject to the Clean Air Act's more stringent new-source standards, EPA alleged in the enforcement action.

EPA's lawsuit seeks to compel the utilities to install pollution control equipment collectively costing billions of dollars.

In the letter to Ballentine, who heads the White House Climate Change Task Force, Thomas Jensen, a former Clinton administration official now in private practice with Troutman Sanders, warned that many voluntary emission-reduction actions taken by utilities under the Department of Energy's Climate Challenge program may make them subject to EPA enforcement action.

DOE's Climate Challenge program was created by the 1990 Clean Air Act amendments.

"It appears that many of the efficiency-related actions voluntarily taken by utilities and others under the Climate Challenge program may fall within the category of actions EPA now considers subject to new source review," said Jensen.

"In other words, actions taken in good faith by companies and individuals to promote one important administration program may well subject those companies and individuals to litigation by EPA and the Department of Justice," Jensen said.

"One would hope that no one in a position of responsibility intended that the (voluntary climate program) would become a de facto roster of potential Clean

Air Act defendants. That is, however, where we find ourselves today," Jensen's letter to Ballentine concludes.

Jensen, a former White House Council of Environmental Quality official who now represents utilities and independent power plant developers, refused to elaborate upon his letter, citing his attorney-client obligations.

EPA has told utilities that actions taken to improve power plant efficiency, such as those routinely taken under the Climate Challenge program, do trigger compliance with the more-stringent new source performance standards, said a official with one of the seven utilities subject to EPA's enforcement lawsuits.

EPA's new-source policy killed a bid by Trigen Energy Corp. (TGN) to make an Illinova Corp. (ILN) power plant more efficient, said Tom Casten, Trigen's president and chief executive.

In a potential deal worth up to \$40 million annually, Trigen wanted to take waste steam from the Illinova plant and sell it to an industrial facility two miles away.

The project would have captured heat energy from the utility's power plant that is currently disposed of as waste and eliminated the proposed industrial customer's need to burn fuel to create steam energy, Casten noted.

The deal went sour after EPA told Illinova that the modifications to capture the steam energy would make the power plant subject to new source performance standards, Casten said.

"The unintended consequence (of EPA's policy is) to keep people from cleaning up the environment," Casten said. "It puts the kibosh on projects that lower fuel use, increase the efficiency and lower global warming.

By Bryan Lee, Dow Jones Newswires, 202-862-6647, bryan.lee@dowjones.com

Congress of the United States
House of Representatives
Washington, DC 20515

4 0338

November 15, 1999

The Honorable Dennis Hastert
Speaker of the House

The Honorable Richard Annen
Majority Leader

The Honorable Richard Gephardt
Minority Leader

Dear House Leadership:

As you are aware, on November 1, 1999, the U.S. Department of Justice and the Environmental Protection Agency (EPA) filed enforcement actions against seven investor owned utilities and the Tennessee Valley Authority alleging violations of the Clean Air Act. EPA claims that the utilities made major modifications to many of their plants without installing additional environmental controls. The seven utilities and TVA deny violating the law and contend that EPA has dramatically changed its interpretation of the maintenance practices that trigger the requirement to install controls designed for new power plants. As a consequence of these charges, the eight utilities contend that they had already planned similar projects, and now face the prospect of canceling those projects or being charged with additional violations for activities such as replacing a fan motor or replacing boiler tubes. This problem is ripe now, during the autumn outage season, when utilities take plants out of service to prepare them for reliable operation during the critical winter months.

This is not just a regional problem or inter-regional dispute. Our concern and our desire for action stem from a very real problem affecting electricity supplies. The maintenance practices in question do not apply solely to these eight companies or to coal fired generators. The uncertainty of what is maintenance versus what is a major modification is a concern for all operators of fossil fueled power plants throughout the country and will impact decisions on how and when they are maintained or utilized. Operators in all parts of the nation have two choices: 1) proceed with maintenance as planned and needed, and risk civil and criminal penalties and court ordered shutdowns, or 2) suspend maintenance during the pendency of the EPA litigation, risking plant breakdowns which could lead to electricity shortages. Fortunately, there is a rational middle ground.

In order to reach a solution, the undersigned members support Congressional action that would provide relief that would do the following and no more: 1) protect the electric utility work force at all plants from criminal charges as a result of performance of their duties pending a final judgment on these issues; 2) allow the companies to continue operating their plants, including the performance of maintenance and critical repair work; and 3) ensure the continuing availability of reliable power during the coming winter months and through next summer. Support of this provision does not mean you are taking sides in this case. Rather, it means you are concerned about and committed to finding a short term solution that ensures reliable electric service.

Thank you for your time and attention to this matter.

Sincerely,

Ed Strickland

Tom Tiahrt

M. P. Ope
JP

TALKING POINTS ON AMENDMENT

THE PROBLEM

- Electric utilities have an obligation to ensure that they have adequate power available to customers. That requires them to perform routine maintenance and repair to ensure that power plants continue to operate, especially during critical times of the year when demand is highest, typically the summer and winter months.
- Court action taken recently by EPA, alleging that electric companies modified their plants without first securing new source review permits, jeopardizes the industry's repair and maintenance capability which could potentially cause significant reliability problems - especially in the capacity short Midwest where these enforcement actions have been levied.
- This enforcement action is causing two critical problems for the industry:
 1. After a 30-day time period following a notice of violation, an accusation can be made that the company and its officers are knowingly violating the law through the continued operation of the plant. Companies should be given the opportunity to carefully review, consider and respond to the government's accusations without having to choose between shutting units down or potentially incurring criminal liability.
 2. Because the enforcement action was levied on plants for what utilities feel constitutes legal, bona fide routine maintenance, similar routine maintenance in the future could also come under additional enforcement action. However, EPA has never provided any guidance regarding the line between legal repair and maintenance and a modification that should trigger New Source Review.

WHAT THE AMENDMENT WILL DO

The amendment will allow the continued operation of electric utility power plants that are currently the subject of suits, for a period of 36 months, and protect electric utility workers from criminal action in order to keep the plants operating.

The amendment will also allow for needed repair and maintenance projects to continue without the additional threat of future criminal or civil action by EPA, as long as those activities do not increase emissions as defined by the Clean Air Act.

WHAT THE AMENDMENT WILL NOT DO

This amendment will in no way prejudice the enforcement action nor erase civil sanctions which will now be decided in the courts. It will however, give utilities the flexibility they need to ensure the continued availability of power plants during the coming winter months.

Discussion dated 11/12/99

**SEC. ____ CONTINUED OPERATION AND MAINTENANCE OF CRITICAL
ELECTRIC FACILITIES**

(a) **Continuing Operation.** — If a judicial or administrative proceeding is or has been commenced against an owner or operator of an electric utility steam generating unit for alleged violations of sections 111, 113, 165, 167, or 173 of the Clean Air Act (and related implementing federal and state regulations) arising out of any physical or operational change made before November 1, 1999 at such unit, no person shall be liable for criminal penalties that may accrue during the 36 month period beginning on November 1, 1999, because of the continuing operation of the unit during that period.

(b) **Maintenance and Repair Activities.** — No person shall be subject to civil or criminal penalties or sanctions (including administrative or injunctive relief) for alleged violations of sections 111, 113, 165, 167, or 173 of the Clean Air Act (and related implementing federal and state regulations) arising out of a physical or operational change at any electric utility steam generating unit during the 36 month period beginning on November 1, 1999, unless such physical or operational change results in an emissions increase as defined in 40 C.F.R. Section 60.14(h) as in effect on November 1, 1999.

AMERICAN OCEANS CAMPAIGN * CENTER FOR MARINE CONSERVATION * DEFENDERS OF
WILDLIFE * EARTHJUSTICE LEGAL DEFENSE FUND * ENVIRONMENTAL DEFENSE FUND *
ENVIRONMENTAL WORKING GROUP * FRIENDS OF THE EARTH * NATIONAL
ENVIRONMENTAL TRUST * NATIONAL RELIGIOUS PARTNERSHIP FOR THE ENVIRONMENT
* NATIVE AMERICAN RIGHTS FUND * NATURAL RESOURCES DEFENSE COUNCIL *
PHYSICIANS FOR SOCIAL RESPONSIBILITY * POPULATION ACTION INTERNATIONAL *
PROJECT ON GOVERNMENT OVERSIGHT * SCENIC AMERICA * UNION OF CONCERNED
SCIENTISTS * UNITED STATES PUBLIC INTEREST RESEARCH GROUP * THE WILDERNESS
SOCIETY

**VOTE AGAINST ANY APPROPRIATIONS BILLS CONTAINING ANTI-
ENVIRONMENTAL RIDERS!**

November 16, 1999

Dear Representative:

We are encouraged by this mornings reports that several of the more egregious anti-environmental riders pending in FY00 appropriations bills have been either dropped or modified. However, we have not yet seen the language of the final bills. We are extremely disturbed by reports that the final bill is likely to include a number of destructive anti-environmental riders - ones that our community has been fighting for many months, such as the rider that would allow extensive dumping of mining waste on federal lands and the rider that would allow renewal of grazing permits for up to ten years without requiring environmental review. Contrary to today's press report, proposed new riders are still in play. These proposed riders would create huge special interest loopholes in long-standing federal environmental laws. One would waive important environmental protections in the 1972 Clean Water Act and the 1977 Surface Mining Control and Reclamation Act for mountaintop coal strip mining operations; another would prolong unlawful air pollution from coal fired plants in violation of the Clean Air Act.

We are outraged that these anti-environmental riders are still in play after strong expressions of citizen opposition from across the country. We urge you to use every means at your disposal to ensure these anti-environmental riders are stripped from the appropriations bills and to vote against the final funding package if it contains environmentally destructive provisions.

Sincerely,

Barbara Jeanne Polo
Acting Executive Director
American Oceans Campaign

Roger McManus
President
Center for Marine Conservation
Rodger Schlickeisen
President

Defenders of Wildlife

Vawter Parker
President
Earthjustice Legal Defense Fund

Fred D. Krupp
Executive Director
Environmental Defense Fund

Ken Cook
President
Environmental Working Group

Brent Blackwelder
President
Friends of the Earth

Paul Hansen
Executive Director
Izaak Walton League

Phil Clapp
President
National Environmental Trust

Paul Gorman
Executive Director
National Religious Partnership for the Environment

John Echohawk
Executive Director
Native American Rights Fund

John Adams
President
Natural Resources Defense Council

Amy Coen
President
Population Action International

Danielle Brian
Executive Director
Project on Government Oversight

Meg Maguire
President
Scenic America

Howard Ris
Executive Director
Union of Concerned Scientists

Gene Karpinski
Executive Director
United States Public Interest Research Group

William H. Meadows
President
The Wilderness Society

Robert K. Musil
Executive Director
Physicians for Social Responsibility

CHARLES E. SCHUMER
NEW YORK

COMMITTEES:
BANKING
JUDICIARY
RULES

United States Senate

WASHINGTON, DC 20510

November 14, 1999

The Honorable William Jefferson Clinton
President
The White House
Washington, DC 20500

Dear Mr. President:

I understand that you will be concluding budget negotiations today and I respectfully request that you oppose the inclusion of any riders in the final budget package that would obstruct the Environmental Protection Agency (EPA) from taking action against power plants that have violated the Clean Air Act.

Currently, the Clean Air Act requires utility companies to modernize their pollution control systems if they make major modifications to their plants. However, many plants in the Midwest have allegedly violated this rule and are now being pursued by numerous lawsuits, including 17 suits by the State of New York, and 32 filed by the EPA and the Department of Justice. I understand that the power companies are currently pursuing legislation that would grant immunity from penalties until the filed cases are finished, consequently removing any incentives for companies to seek a prompt resolution.

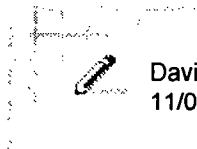
Immunity from certain penalties would allow companies involved in lawsuits as much as a decade to fight a battle in the courts. Meanwhile the residents and environment of the Northeast would suffer under increased pollution and acid rain caused by the emissions that drift over from Midwestern power plants. In New York, acid rain is responsible for poisoning 25 percent of our lakes, decimating our forests and disfiguring our monuments, not to mention further sickening our citizens.

The 49 pending lawsuits should be allowed to continue, uninhibited by the protection of Congress. I intend to join with my colleagues from New York and the region to fight any rider that would alter the course of these lawsuits and I urge you to strongly oppose this rider.

Sincerely,



Charles E. Schumer
United States Senator



David Gardiner
11/09/99 03:53:35 PM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP, Julie M. Anderson/WHCCTF/EOP@EOP
cc:
Subject: rider

The attached note would indicate that some Senate staff are thinking of supporting such an amendment. Do we know what we think of this if it goes?

----- Forwarded by David Gardiner/CEQ/EOP on 11/09/99 03:52 PM -----



Becky Stanfield <beckystan@pirg.org>
11/09/99 03:48:03 PM

Record Type: Record

To: David Gardiner/CEQ/EOP
cc:
Subject: rider

Date: Tue, 09 Nov 1999 15:37:46 -0500
From: Nikki_Roy@lautenberg.senate.gov (Nikki Roy)
Subject: Re: Language to allow power plant maintenance
To: jim_jepsen@durbin.senate.gov (jim jepsen),
gen_cullen@bayh.senate.gov (gen cullen),
scott_brady_at_Cleland-DC@mailexc2.senate.gov (scott brady),
catharine_cyr@graham.senate.gov (catharine cyr),
john_richards@rockefeller.senate.gov (john richards),
franz_wuerfmannsdobler@byrd.senate.gov (franz wuerfmannsdobler),
Nikki_Roy@lautenberg.senate.gov (Nikki Roy)
Cc: chris_miller@epw.senate.gov (chris miller)

By now, I'm sure we've all seen the language being circulated by certain power companies ostensibly to provide for routine maintenance of power plants. The concern I've heard from a lot of stakeholders is that the language would do much more than simply allow routine maintenance of power plants, and would greatly tip the balance in favor of the power companies.

We've refined the language sent around last night. We think this comes much closer to the right balance in (1) allowing routine maintenance at power plants, (2) without interfering with the EPA enforcement action.

Here it is:

No civil or criminal penalty liability shall attach for physical changes commenced after November 1, 1999 which -

(a) are limited to routine maintenance under 40 CFR Sec. 52.21(b)(iii)(a), as that term has been interpreted by the courts of the United States prior to the date of enactment of this section;

(b) do not result in actual or potential increases in hourly or annual emissions, as those terms have been interpreted by the courts of the United States prior to the date of enactment of this section; and

(c) are promptly reported to the U.S. Environmental Protection Agency and the applicable State permitting authority.

Nothing in this section shall be construed to affect the availability of injunctive relief in any action that has been or may be filed in a court of the United States.

Again, please call (4-2094) or e-mail with questions.

**White House Climate Change Task Force**

734 Jackson Place, N.W. • Washington, DC 20503

FACSIMILE TRANSMISSION SHEET

To	ROGER	From	DAVID
Office		Date	
Fax Number		Fax Number	395-2342
Office Number		Office Number	395-2310

Comments:UTILITIES' DRAFT OF
RIDER

Pages: _____, including this cover sheet.

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11/09/1999 15:55

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USPIRG

NO.959

P.2/3

002

11/NOV. 9.1999 11:30PM

SENATOR LAUTENBERG

SECTION _____ Continued Operation and Maintenance of Critical Electric Facilities

With respect to the period pending entry of final judgment or decision (including, as applicable, all appeals and post-judgment proceedings or completion of administrative process or action in an action against an owner or operator or an electric utility unit concerning the applicability of 42 U.S.C. Sections 7411, 7413, 7476, 7477, 7503 (and related implementing federal and state regulations thereto) to any physical or operational change at an electric generating unit, said owner or operator shall not be subject to civil or criminal penalties or sanctions, including administrative or injunctive relief, for continued operation of that electric utility unit or for undertaking a physical or operational change at said unit after November 1, 1999, that does not result in an increase in that unit's potential to emit as defined in 42 C.F.R. Section 52.21 (b)(4).

actual v/ potential

~~*David Weisbach~~
~~*[illegible]~~

~~*Don't~~

~~*[illegible]~~

~~*[illegible]~~

11/NOV. 9.1999 11 1:38PM

SENATOR LAUTENBERG

Explanatory Statement To Accompany Amendment

The proposed provision is intended to allow electric utility companies subject to the U.S. Environmental Protection Agency's (EPA) novel and unprecedented enforcement action to continue to maintain their plants in a safe and reliable operating condition until this matter is resolved judicially.

This provision preserves a utility company's ability to provide vital electricity to the nation by suspending potential daily civil and criminal sanctions or penalties while the case is pending. The EPA initiated this series of enforcement actions in U.S. District Court, charging violations of the Clean Air Act's new source review (NSR) program. Given EPA's position in the pending litigation, electric utility companies run the risk that ongoing and future routine repair and maintenance projects will be deemed to be "modifications," thus subjecting the companies to additional daily civil and, potentially, criminal sanctions.

The proposed provision would afford electric utility companies the necessary assurance that such routine maintenance and repair activities could be undertaken without being subject to additional daily fines during this enforcement action period. In the absence of such protection, electric utilities may be forced to forego performing these necessary day-to-day activities, or, where safety considerations so dictated, even to shut down their plants entirely.

The proposed provision allows the companies to operate while presenting evidence to the courts so that they may decide whether EPA's radical new interpretation of the Clean Air Act will become the new industry standard. The proposed provision will not affect the outcome of any of the issues presented in the actions already instituted. Such issues will be resolved either in the courts or through legislative means. Nor will the provision threaten harm to the environment in any way. The provision extends only to those activities that do not result in an increase in a unit's potential to emit regulated pollutants, as that concept is defined by EPA regulations.

**White House Climate Change Task Force**

734 Jackson Place, N.W. • Washington, DC 20503

FACSIMILE TRANSMISSION SHEET

To	ROGER	From	DAVID
Office		Date	
Fax Number		Fax Number	395-2342
Office Number		Office Number	395-2310

Comments:

Pages: _____, including this cover sheet.**IF TRANSMITTAL IS INCOMPLETE, PLEASE PHONE**

American Lung Association * Clean Air Council * Clean Air Task Force * Environmental Advocates
* Environmental Defense Fund * Environmental Law and Policy Center * Hooper Environmental
Council * Illinois Environmental Council * Izaak Walton League of America * Michigan
Environmental Council * National Environmental Trust * Natural Resources Council of Maine *
Natural Resources Defense Council * New York Public Interest Research Group * Ohio Citizen
Action * Ohio Environmental Council * Ohio Public Interest Research Group * Physicians for Social
Responsibility * Southern Environmental Law Center * U.S. Public Interest Research Group *
Wisconsin's Environmental Decade

November 12, 1999

President William Jefferson Clinton
1600 Pennsylvania Avenue
Washington, DC 20500

Dear Mr. President,

We are writing to urge you to veto any appropriations bill that includes a rider that would interfere with efforts by the Justice Department, states, and citizen groups to enforce the Clean Air Act against polluting electric power plants. Rider language circulated by electric utility companies would confer broad and dangerous immunity on owners and operators of every electric power plant in the country. The immunity could last for years until all compliance litigation was resolved.

The rider would prolong litigation and unlawful pollution. The immunity shield would eliminate any interest by the utilities in prompt resolution of these cases, instead encouraging companies to fight enforcement with legions of lawyers. The rider as drafted would bar the government from preventing significant increases in pollution from electric plants, even if other provisions of law were broken and public health standards were violated.

EPA's decision to file lawsuits and take other legal steps against 32 coal-fired power plants in 10 Midwestern and Southern states for violations of federal air pollution laws was prompted by evidence that the plant owners failed to apply for new air emissions permits required when major capital investments are made at a plant. If the permits had been sought, new, modern emission standards would apply, requiring the plants to reduce their smog, soot and acid rain emissions by 50% or more.

As you know, older coal-fired power plants are exempted from meeting modern pollution standards and can therefore pollute at 4 to 10 times the rate of new plants built today -- as long as they don't add significant plant investments that increase emissions. Approximately 450 coal-fired plants in the United States do not meet modern performance standards. EPA and DOJ's suits and notices allege that 32 of the plants do not qualify for this exemption because they have made major investments that have increased pollution.

We understand the Department of Justice reads the rider as effectively amending the Clean Air Act to allow owners and operators of electric utility units to modify their facilities in virtually any fashion they choose without applying for permits or installing the pollution controls required by the Act. The rider is not limited to just those parties named in the government's lawsuits; it would immunize all owners and operators of units from enforcement actions until the pending cases are concluded and all appeals exhausted -- which could take many years. During this time, this legislation would authorize (perhaps even encourage) the entire industry to engage in acts -- major modifications -- which the law-abiding among them would have avoided. Further the language is not confined to the relief sought in the cases (permits and pollution controls); it forecloses the government's ability to act in any way to protect public health if an emergency materializes at a power plant that requires a swift enforcement response.

In announcing the case against the utilities, Attorney General Janet Reno said, "When children have trouble breathing because of pollution from a utility plant hundreds of miles away, something must be done." The rider would undermine the Department of Justice's ability to protect children's health and bar the Department from

effectively enforcing the nation's clean air standards. We urge you to publicly announce that you will oppose this rider and any other efforts to undermine the EPA's ability to protect health and safety.

Sincerely,

Fran Du Melle
Deputy Managing Director
American Lung Association

Joseph Otis Minott, Esq.
Executive Director
Clean Air Council

Armond Cohen
Director
Clean Air Task Force

Jason K. Babbie
Air and Energy Program Director
Environmental Advocates

Fred Krupp
Executive Director
Environmental Defense Fund

Howard Learner
Executive Director
Environmental Law and Policy Center

Andy Knott
Air and Energy Policy Director
Hoosier Environmental Council

John Thompson
Clean Air Advocate
Illinois Environmental Council

Paul Hansen
Executive Director
Isaak Walton League of America

Isaac Elencave
Policy Specialist
Michigan Environmental Council

Phil Clapp
President
National Environmental Trust

Sue Jones
Air Quality Project Director
Natural Resources Council of Maine

David Hawkins
Senior Attorney
Natural Resources Defense Council

Larry Shapiro
Senior Attorney
New York Public Interest Research Group

Sheir Weir
Consumer Issues Director
Ohio Citizen Action

Kurt Waltzer
Clean Air Program Manager
Ohio Environmental Council

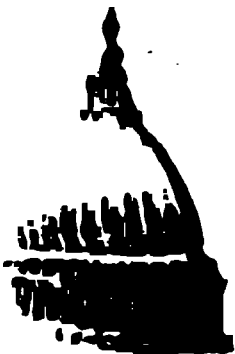
Amy Simpson
Director
Ohio Public Interest Research Group

Robert K. Musil, PhD
Executive Director
Physicians for Social Responsibility

Jeff Gleason
Deputy Director
Southern Environmental Law Center

Gene Karpinski
Executive Director
United States Public Interest Research Group

Keith Reopelle
Executive Director
Wisconsin's Environmental Decade



U.S. PIRG FAX

To: ROGER BALLENTINE

Of: _____

Fax: _____

From: REBECCA STANFELD

Number of pages including this cover sheet: 2

Please call 202-546-9707 if you have trouble receiving this fax.

Message: _____

U.S. Public Interest Research Group
218 D Street, SE • Washington, DC 20003
phone: 202-546-9707 • fax: 202-546-2461

**American Lung Association * Clean Air Council * Clean Air Task Force * Environmental Advocates
 * Environmental Defense Fund * Environmental Law and Policy Center * Hoosier Environmental
 Council * Illinois Environmental Council * Izask Walton League of America * Michigan
 Environmental Council * National Environmental Trust * Natural Resources Council of Maine *
 Natural Resources Defense Council * New York Public Interest Research Group * Ohio Citizen
 Action * Ohio Environmental Council * Ohio Public Interest Research Group * Physicians for Social
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 Wisconsin's Environmental Decade**

November 12, 1999

President William Jefferson Clinton
 1600 Pennsylvania Avenue
 Washington, DC 20500

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The rider would prolong litigation and unlawful pollution. The immunity shield would eliminate any interest by the utilities in prompt resolution of these cases, instead encouraging companies to fight enforcement with legions of lawyers. The rider as drafted would bar the government from preventing significant increases in pollution from electric plants, even if other provisions of law were broken and public health standards were violated.

EPA's decision to file lawsuits and take other legal steps against 32 coal-fired power plants in 10 Midwestern and Southern states for violations of federal air pollution laws was prompted by evidence that the plant owners failed to apply for new air emissions permits required when major capital investments are made at a plant. If the permits had been sought, new, modern emission standards would apply, requiring the plants to reduce their smog, soot and acid rain emissions by 50% or more.

As you know, older coal-fired power plants are exempted from meeting modern pollution standards and can therefore pollute at 4 to 10 times the rate of new plants built today – as long as they don't add significant plant investments that increase emissions. Approximately 450 coal-fired plants in the United States do not meet modern performance standards. EPA and DOJ's suits and notices allege that 32 of the plants do not qualify for this exemption because they have made major investments that have increased pollution.

We understand the Department of Justice reads the rider as effectively amending the Clean Air Act to allow owners and operators of electric utility units to modify their facilities in virtually any fashion they choose without applying for permits or installing the pollution controls required by the Act. The rider is not limited to just those parties named in the government's lawsuits; it would immunize all owners and operators of units from enforcement actions until the pending cases are concluded and all appeals exhausted – which could take many years. During this time, this legislation would authorize (perhaps even encourage) the entire industry to engage in acts – major modifications – which the law-abiding among them would have avoided. Further the language is not confined to the relief sought in the cases (permits and pollution controls); it forecloses the government's ability to act in any way to protect public health if an emergency materializes at a power plant that requires a swift enforcement response.

In announcing the case against the utilities, Attorney General Janet Reno said, "When children have trouble breathing because of pollution from a utility plant hundreds of miles away, something must be done." The rider would undermine the Department of Justice's ability to protect children's health and bar the Department from

effectively enforcing the nation's clean air standards. We urge you to publicly announce that you will oppose this rider and any other efforts to undermine the EPA's ability to protect health and safety.

Sincerely,

Fran Du Melle
Deputy Managing Director
American Lung Association

Armond Cohen
Director
Clean Air Task Force

Fred Krupp
Executive Director
Environmental Defense Fund

Andy Knott
Air and Energy Policy Director
Hoosier Environmental Council

Paul Hansen
Executive Director
Isaac Walton League of America

Phil Clapp
President
National Environmental Trust

David Hawkins
Senior Attorney
Natural Resources Defense Council

Sheir Weir
Consumer Issues Director
Ohio Citizen Action

Amy Simpson
Director
Ohio Public Interest Research Group

Jeff Gleason
Deputy Director
Southern Environmental Law Center

Keith Roopelle
Executive Director
Wisconsin's Environmental Decade

Joseph Otis Minott, Esq.
Executive Director
Clean Air Council

Jason K. Babbie
Air and Energy Program Director
Environmental Advocates

Howard Learner
Executive Director
Environmental Law and Policy Center

John Thompson
Clean Air Advocate
Illinois Environmental Council

Isaac Elencave
Policy Specialist
Michigan Environmental Council

Sue Jones
Air Quality Project Director
Natural Resources Council of Maine

Larry Shapiro
Senior Attorney
New York Public Interest Research Group

Kurt Waltzer
Clean Air Program Manager
Ohio Environmental Council

Robert K. Musil, PhD
Executive Director
Physicians for Social Responsibility

Gene Karpinski
Executive Director
United States Public Interest Research Group

United States Senate

WASHINGTON, DC 20510

For release: November 10, 1999
Contact: Dan Gerstein (Lieberman), 202-224-0414

Northeastern Senators Speak Out Against "Back Door" Anti-Environmental Riders on Appropriations Bills

WASHINGTON - Six high-ranking Senators from the Northeast launched a concerted effort today to prevent the remaining appropriations bills from becoming vehicles for more anti-environmental riders.

The Senate Six - Joe Lieberman (D-CT), Jim Jeffords (R-VT), Pat Moynihan (D-NY), Pat Leahy (D-VT), Frank Lautenberg (D-NJ) and John Kerry (D-MA) - issued a joint statement protesting one of the worst potential riders being floated, which would undercut a recent Clean Air Act enforcement action.

On November 3rd, the Justice Department filed seven lawsuits on behalf of EPA against utility companies in the Midwest and South, charging that 17 power plants illegally polluted the air by failing to install pollution control equipment when they were making major modifications to their plants. Several Northeastern states, including the New York and Connecticut, have also filed notices of intent to sue many of the same utilities that are part of this action.

The rider under consideration, which has been proposed by some of the companies being sued, would block Justice Department's enforcement actions, and could also handcuff the ability of states to seek their own remedies for illegal pollution degrading their air quality.

The six Senators voiced their opposition to the possible rider in the form of colloquy on the Senate floor.

"To seek relief for pending violations of federal law through a last-minute rider, without any congressional hearing, debate, or voting record, is utterly inappropriate," Lieberman said. "It undermines the democratic process, which is constitutionally guaranteed to American citizens and to the states that have similar cases pending."

"With one set of loopholes about to close, these power plants now seek to create new ones," Jeffords said. "Haven't these plants done enough damage already?"

"[This rider] would set a very dangerous precedent for Congress to attempt to squash Federal enforcement actions of any kind," Leahy said. "The procedures for testing and appealing the appropriateness and reach of enforcement actions are well-established. These procedures do not include a back door, last minute 'Hail Mary' pass by Congress using a rider to an appropriations bill as a vehicle."

"This rider would wreak havoc on environmental enforcement actions and allow huge increases in pollution," Lautenberg said.

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Over the course of the summer, the Tatanka crew earned its reputation as a team that could be depended upon to get its job done quickly and effectively. Based upon its outstanding performance ratings and the respect it earned from other highly regarded Hot-shot crews, Forest Service officials expect the team to attain National Type 1 status—the highest rating a fire-fighting team can receive—before the 2000 fire season, a full year ahead of schedule.

Mr. President, I am very proud of the accomplishments of this crew. Forest fires are dangerous and unpredictable, and fighting them is one of the most difficult, physically exhausting jobs of which I know. Firefighters spend days deep in forests and far from possible help, digging fire lines and cutting trees to keep fires from spreading. In just one year, the Tatanka team has met these challenges head-on, and shown that it is equal to the toughest challenges our nation has to offer. I want to offer my congratulations to all of those who served on the team. I am sure that they will have an outstanding future.

OPPOSITION OF EFFORTS TO
BLOCK THE DEPARTMENT OF
JUSTICE'S RECENT ENFORCE-
MENT ACTION

Mr. LIEBERMAN. Mr. President, I rise today to speak briefly about an issue which has surfaced recently in the national press, and now arises with regard to the remaining appropriations bills before us. On November 3rd, the Justice Department filed seven lawsuits on behalf of EPA against electric utility companies in the Midwest and South. The lawsuit charged that 17 power plants illegally polluted the air by failing to install pollution control equipment when they were making major modifications to their plants. This action is one of the largest enforcement investigations in EPA's history, and seeks to control pollution which contributes to degraded air quality throughout the Northeast. I have recently learned that some of the defendants may be seeking relief from this enforcement action by adding a rider to one of the remaining appropriations bills. I am speaking with my colleagues here today in strong opposition to this effort. To seek relief for pending violations of federal law through a rider without any congressional hearing, debate, or voting record, is utterly inappropriate. It undermines the democratic process which is constitutionally guaranteed to American citizens, and to the states which have similar cases pending.

The alleged violations are extremely serious. Congress has long recognized the need to control transported air pollution. Provisions to study and address the issue have been included by major amendments to the Clean Air Act. Yet the problem still remains and the statistics are staggering. They dem-

onstrate just how much older Midwestern powerplants contribute to air pollution in the Northeast. For example, one utility in Michigan emits almost 6 times more nitrogen oxides than all the utilities in the entire state of Connecticut. Ohio power plants produce nearly 9,000 tons a day of sulfur dioxide, which directly contributes to acid rain. One single plant in Ohio produces as much nitrogen oxide as all of the plants in the state of New York. Approximately 67 million people east of the Mississippi River live in area with unhealthy levels of smog. EPA estimates that every year that implementation of regional pollution controls are delayed, there are between 200-300 premature deaths, thousands of additional incidences of moderate to severe respiratory symptoms in children, and hundreds of thousands of children suffering from breathing difficulties. Now these polluting power plants want special relief during the court's review.

The alleged violations result from a portion of the Clean Air Act that many refer to as the "grandfathering" provisions. When the Clean Air Act was amended in 1970 and 1977, there were two categories of requirements: those for existing power plants, and those for new sources. At the time, most people envisioned that the older coal burning plants would soon be retired, making the additional controls for old plants unnecessary. Instead, the life span of older coal fired plants has been extended by modifications to their facilities. Many of the older coal fired plants have stayed around for three decades, and coal power plants are now the largest industrial source of smog pollution. Of the approximately 1,000 power plants operating today, 500 were built before modern pollution control requirements went into effect.

Although the Clean Air Act did exempt older plants from the new standards, it required that the plants meet a test of "prevention of significant deterioration" to protect the public when a plant undertook a major modification. Although the definition of "major modification" has been debated, Section 111 of the Clean Air Act clearly states that a modification means "any physical change... which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." What is at stake in the recent enforcement action is the question of whether the power plants undertook major modifications without installing state of the art pollution controls, in violation of this Clean Air Act requirement.

Mr. KERRY. Will the Senator yield for a question?

Mr. LIEBERMAN. Certainly.

Mr. KERRY. I understand from some of the publicity around a similar suit filed by the New York Attorney General that some of the modifications being made to power plants were significant. For example, one company al-

legedly replaced a reheater header and outlet, a pulverized coal conduit system, the economizer, and casing insulation. While it is impossible to judge any of these types of modifications without additional information, it certainly seems like utilities created a loophole in the law to essentially rebuild the system without considering it as a major modification. Would a legislative rider on this issue essentially pre-judge the court's findings, as to whether the modifications undertaken at the plant are indeed "major"?

Mr. LIEBERMAN. Yes. With this rider, Congress would be substituting its opinion for the factual and legal analysis by the court. There will be no opportunity for expert opinions to be heard. In fact, I understand there may even be discussions about trying to add rider language which would allow modifications which would result in significant increases in emissions, by basing them on a unit's potential to emit pollution. This change is a significant departure from the current law, which requires that pollution controls be included when plants are making modifications that cause emissions to increase. For example, a plant's potential to emit pollution may be at 10 tons, while it actually emits 7. The test has been that if modifications are made that raise emissions above the 7 tons, pollution controls are required to be instituted. Since the potential emissions are often much greater than actual emissions, actual emissions have been the threshold to trigger public health protections. A rider that would seek to allow modifications to go forward would give utilities a license to continue to pollute our air while the enforcement action is pending. In its worst form, it would also "pre-judge" the court's determination on these matters. These are major reasons why I oppose using a rider to address this issue. It makes no sense for Congress to make a statement on this complex issue with no opportunity for public deliberation. I yield back to my colleague from Massachusetts.

Mr. KERRY. I understand that some suggest that it would be impossible to achieve new pollution standards because of technological limitations. I would like to address that point. States in Northeast have already taken steps to reduce pollution to comply with Clean Air Act requirements, including instituting major controls on those older power plants and plants. Northeast Utilities has spent \$40 million in the last 8 years to reduce fossil plant emissions. In a July 31, 1998 letter to Administrator Browner, Northeast Utilities wrote that "in our experience the Merrimack Station selective catalytic reduction technology is effective in removing NOx, can be installed fairly quickly, and the installation has minimal impact on the availability of the generating unit." Other companies, including Pacific Gas & Electric and Southern Company have made similar

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investments at plants in Massachusetts. While these are only a few examples, the experience of these companies is echoed by others. Real world experience bears out the fact that solutions are available and are cost effective. It is also interesting to note that the Tennessee Valley Authority, which is the subject of the enforcement action, recently announced plans to implement state of the art ozone controls. The solutions are out there, and as utilities in New England have demonstrated, when there is a will there is a way.

I would like to address what is, in my opinion, the fundamental problem with this rider. These power companies and our Department of Justice have a legal dispute, and that dispute should be settled through the legal process. I understand that some of the defendant companies, and some in the Senate, may feel that the Environmental Protection Agency and the Department of Justice are being overzealous in pursuing this enforcement action or that there are politics at play here. I respectfully and strongly disagree, and I urge my colleagues to disregard such rhetoric. It has been estimated that as many as 1,000 people each year die in Massachusetts from air pollution from power plants, automobiles and other sources. And, in particular, emissions from coal-fired plants, the dirtiest of which are outside my state, cause high levels of ozone, which increases the incidence of respiratory disease and premature aging of the lungs. Acid deposition from sulfur can severely degrade lakes and forests. Mercury, which is highly poisonous, accumulates in fish locally. In other words, there is a very real cost to this pollution. Indeed, for some, the price they pay is their very health and well being. I can accept that some of my colleagues may feel that the Department of Justice or the Environmental Protection Agency is pursuing a flawed legal argument, but I cannot accept that the people who are alleging harm, who are paying the price for this pollution, should be denied their day in court. The Department of Justice should not serve at the pleasure of Congress and defendants with the power influence. Congress, it should serve the law and the people. I yield to my colleague Senator LIEBERMAN.

Mr. LIEBERMAN. Thank you. Certainly, many of our constituents have concerns about how cost and service delivery would be implicated under any enforcement action. If the court were to impose fines and injunctive requirements which would force power companies to go out of business, I think we would all join in opposing that outcome. Yet time and again, we hear claims that such dire outcomes will occur when we ask companies to comply with the law. But the evidence shows that environmental goals are being met without sacrificing economic growth. In this circumstance, I believe the Department of Justice and EPA have been clear that their objec-

tive, if the violations are found to have occurred, is to require that the utilities make appropriate investments in pollution control. In fact, EPA has a demonstrated record on the kind of remedy it has sought in a similar case that involved another segment of industry.

EPA recently undertook a similar enforcement action against the paper and pulp industry for similar major New Source Review violations. After looking into the paper and pulp sector as part of its Wood Products Initiative, the EPA found New Source Review violations at roughly 70-80 percent of the facilities it investigated. Through its enforcement action, EPA was able to work with industry to generate emission reductions as high as 500 tons of volatile organic compounds. However, these enforcement actions did not require that controls be put in all at once. Rather, a schedule was created to phase in controls so that the pollution controls were instituted in a way that protected the public without crippling the industry. It is disingenuous to argue that we need a preemptive rider to protect against what the outcome of the pending enforcement action might be. There is a history of enforcement decisions which demonstrate that the courts secure remedies that protect the public's interest, and that EPA has had a willingness to work with industry to that end.

Fundamentally what we are addressing here is a matter of fairness. Right now utilities in Southern and Midwestern states emit over 4.5 times more nitrogen oxides than utilities in the Northeast. A study by the Northeast States for Coordinated Air Use Management found that northeastern states will have to pay between \$1.4 and \$3.9 billion for additional local controls to reduce ozone pollution if six upwind states fail to implement needed controls. I notice that my colleague from Vermont is here. I yield the floor for him to offer some remarks about how the equity issue is particularly important within a deregulated marketplace.

Mr. JEFFORDS. I thank my distinguished colleague from Connecticut for his acute remarks. He is quite right; at root, this is a question of equity, and it is a question of fundamental importance in a deregulated power market.

The Nation's dirtiest power plants have abused loopholes in federal law to dirty our air, pollute our lungs, and kill our most vulnerable citizens. With one set of loopholes about to close, these power plants now seek to create new ones.

These power plants have exploited the law for nearly 30 years. Now, EPA is exposing their effort for what it is: a blatant violation of the public trust. In response, these dirty polluters are pushing appropriations riders that would justify and permanently extend their unlimited ability to pollute.

Haven't these power plants done enough damage already? Isn't it

enough that they have been allowed to pollute 10 times more than our plants in the Northeast for years and years? Couldn't they now apply the same pollution control equipment that our plants in the Northeast employ?

The problem is growing even worse with the deregulation of electricity markets. In the five years since deregulation of the wholesale electricity market, increased generation at coal fired power plants has added the equivalent of 37 million cars worth of smog to our air. These power plants are now seeking to permanently extend their unfair advantage.

We need a level playing field. The nation's dirtiest power plants should not be able to exploit loopholes in federal law at the expense of the rest of the nation. We need to pass laws to clean up our air, not make it dirtier. I strongly oppose any attempt to make it easier for the nation's dirtiest power plants to continue their excessive pollution.

Mr. MOYNIHAN. Mr. President, I want to thank my colleagues for voicing their justified concerns on this important issue. I understand that there is the potential for language to be added to one of the remaining appropriations bills that would interfere with the efforts of a number of states to seek relief from dangerous air pollution they receive from a number of large coal-burning facilities which may have violated the Clean Air Act.

As Senator LIEBERMAN has explained, a number of coal-burning facilities were "grandfathered," exempting them from pollution control requirements. Congress believed that utilities would soon retire these older plants. The grandfathered facilities were given permission to proceed with routine maintenance, but any major modifications would be subject to review. It now appears that a number of these facilities did circumvent the law by increasing generating capacity without installing the appropriate pollution control technologies.

Now, it appears these same facilities—after receiving notification that New York and potentially other states intend to sue for these violations of the Clean Air Act—may, once again, circumvent the law by encouraging the adoption of a rider which would interfere with these lawsuits. Any effort by implicated utilities to thwart efforts of States to obtain injunctive relief, which States could use to mitigate damage which has already occurred, is inappropriate.

Throughout my career, I have been a strong proponent of allowing the Courts to do their work without interference of politics—indeed, that was the intent of the Framers of the Constitution. Madison and Hamilton eloquently explained the importance of a balance of powers in The Federalist Papers. The Framers of the Constitution presumed conflict. The Constitution assumes self-interest. It carefully balances the power by which one interest will offset another interest, and the

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outcome will be, in that wonderful phrase of Madison, 'the defect of better motives.'

The States must be allowed to protect their rights. I should think that any Member of this body ought to defer to the courts before which this issue is now being placed.

Mr. LEAHY. Mr. President, I want to join my colleagues in voicing my strong objection to a rider that I understand may be attached to one of the remaining appropriations bills. The rider would block all or part of an ongoing federal environmental enforcement action. If what I hear is true, I am troubled on several levels. First, I think that it would set a very dangerous precedent for Congress to attempt to squash Federal enforcement actions of any kind. The procedures for testing and appealing the appropriateness and reach of enforcement actions through the court system and under the Administrative Procedures Act are well established. These procedures do not include a back door, last minute "Hall Mary pass" by Congress using a rider to an appropriations bill as the vehicle. In this instance, someone does not like an environmental enforcement action. If we do it here, will we attach something to appropriations bill to stop antitrust enforcement actions? How about price fixing cases? Where would this type of meddling cease?

What we may be seeing with the filing by EPA and DOJ is an enforcement action that has hit the bull's eye dead on. And now utilities who may have crossed the line are pulling out all the stops to thwart the action.

Let's not kid ourselves about what is at stake. Many of us have drafted and introduced legislative proposals to address power plant pollution. We have turned up the heat, and the industry has taken notice. Further, the debate over electric utility restructuring is starting up again in the House of Representatives and the Senate. While there are substantial economic benefits possible under restructuring, Congress should also address environmental consequences of deregulation. In order to alert the Senate leadership of this important issue that has so far been ignored in the restructuring debate, I have asked my colleagues to join me in sending a letter to the Senate leadership requesting that the Senate include a provision to eliminate the grandfather loophole for older power plants. My colleagues from Connecticut and New York certainly know the history of the Clean Air Act more than any of us. Senator LIEBERMAN, how do you see this enforcement action affecting the Clean Air Act loophole?

Mr. LIEBERMAN. I thank my colleague from Vermont. As you have argued in the past, the 1970 Clean Air Act Amendments assumed that one of the major sources of these pollutants—older power plants—would be retired and replaced with cleaner burning plants. Unfortunately, this has not happened. The average power plant in

the United States uses technology devised in the 1950's or before. The EPA-DOJ enforcement action is now alleging that many of these generating units have been modified and are no longer entitled to their grandfathered status.

Mr. LEAHY. And, I think we are making a fair statement in saying that these grandfathered power plants will enjoy an important competitive advantage under restructuring, because they do not have to meet the same air quality standards as newer plants. Many of these grandfathered plants are currently not running at a high capacity because demand for their power production is limited to the size of their local distribution area. Under restructuring, the entire nation becomes the market for power and production at these grandfathered plants and their emissions will increase. Deregulation of all utilities will drive a national race to capture market share and profit through producing the cheapest power.

Some or all of the rider may apply to plants operated by the Tennessee Valley Authority (TVA). What do we know about TVA's fossil fired power plants in Tennessee, Kentucky, and Alabama? Fifty-eight of 59 units are grandfathered, with the average startup year being 1957, 18 years before the Clean Air Act was passed. The average electricity prices for the TVA states are 6.08 cents in Tennessee, 5.58 cents in Kentucky, and 6.74 cents in Alabama. The average price nationally in 1997 was 8.43 cents. TVA sells some of the cheapest electricity, in part, because it is operating these old, subsidized grandfathered plants. In a deregulated national market, will TVA be competitive? The answer is yes.

TVA-wide in 1997 the 59 units emitted 98.5 million tons of CO₂, nearly 5% of the U.S. total for power plants. If the TVA plants were all in one state that state would rank sixth in CO₂ emissions. In 1997, the TVA plants emitted 805,300 tons of acid rain producing SO₂. If the TVA plants were all in one state that state would rank fifth in SO₂ emissions. Unfortunately we do not have comparable data for ozone producing nitrogen oxide emissions or for emissions of toxic mercury, but I think my point on emissions is made. We should not be looking for a way to unfairly exempt TVA or other grandfathered plants from environmental regulations, rather we need to be looking for the best ways to bring these old plants up to date with current technology.

Again, I want to thank my colleagues for their conviction on objecting to this rider. Congress needs to close the grandfather loophole, not attempt backdoor ways to thwart the will of the prior Congresses that enacted the Clean Air Act of 1970, and the amendments to it in 1977 and 1990.

Mr. LAUTENBERG. Mr. President, I would like to join my colleagues in expressing concern about the language

that would interfere with enforcement actions against several power companies. Here we have an excellent example of why we should not be addressing complex, controversial matters in last-minute amendments to spending bills. The proponents of the language assert that they have no interest in interfering with the EPA-DOJ enforcement actions. In fact, the language they have been circulating would wreak havoc on the enforcement actions. The proponents assert that they are interested merely in allowing routine maintenance to occur, but in fact their language makes no mention of routine maintenance. The proponents assert that their language would have no impact on the environment, but in fact their language would allow increases in actual emissions. They also raise the specter of drastic effects to the power industry, which we have not seen in other industries that faced similar enforcement actions.

At the very least, we should all agree that this issue is sufficiently complicated and controversial, and its impacts on public health profound enough, that it deserves to be worked out in the authorizing process. It is far problems like this that we have authorizing committees, such as the Environment and Public Works Committee on which I sit, and before which I am sure the proponents would find a sympathetic audience. It is in the daylight of the authorizing process, where we can hear from expert witnesses, where we can have public markups, and where we take the time to untangle and properly resolve these types of issues, that we should address this issue.

TEN-YEAR ANNIVERSARY OF THE FALL OF THE BERLIN WALL

Mr. KYL. Mr. President, as we work through the final days of the legislative session, we are apt to become mired in the details of our work. We can lose sight of the special opportunity we have, as legislators, to represent our fellow citizens and to conduct the business of a democratic society in the Nation's Capital.

In this spirit, I wish to draw the Senate's attention to a very special anniversary one that I hope can inspire us to bring our efforts renewed appreciation for our blessings—and our duties—as legislators in the greatest democracy in human history.

Ten years ago yesterday, the starkest symbol of human bondage in this century—the Berlin Wall—shook, cracked, and then collapsed. To be sure, it took time for all of it to be physically dismantled. Sections of it still stand, left as symbols all at once of man's capacity for evil and his insatiable drive to be free. But in one magnificent moment 10 years ago, without a shot being fired, people who had only known cold war captivity crossed the line and became free.

They were helped across by many hands: by the American people who

PATRICK LEAHY
VERMONT

COMMITTEES:
AGRICULTURE, NUTRITION, AND
FORESTRY
APPROPRIATIONS
JUDICIARY

United States Senate

WASHINGTON, DC 20510-4502

October 8, 1999

Dear Colleague:

The debate over electric utility restructuring is beginning to heat up again in the House of Representatives and the Senate. While there are substantial economic benefits possible under restructuring, Congress should also address environmental consequences of deregulation. In order to alert the Senate leadership of this important issue in the restructuring debate, I want to invite you to join me in sending the attached letter to Senators Lott and Daschle requesting that the Senate include a provision to eliminate the grandfather loophole for older power plants.

Although we have made great strides in reducing air pollutants under the Clean Air Act, that legislation assumed that one of the major sources of these pollutants – older power plants – would be retired and replaced with cleaner burning plants. Unfortunately, this has not happened. The average power plant in the United States uses technology devised in the 1950's or before. More the 75 percent of the units currently in operation are grandfathered under the Clean Air Act of 1970.

These grandfathered power plants will enjoy an important competitive advantage under restructuring because they do not have to meet the same air quality standards as newer plants. Many of these grandfathered plants are currently not running at a high capacity because demand for their power production is limited to the size of their local distribution area. Under restructuring, the entire nation becomes the market for power and production at these grandfathered plants and their emissions will increase.

Failure to address the power plant loophole would lock in an unfair economic benefit that also has serious environmental consequences. Restructuring offers an opportunity to not only level the economic playing field but to bring all power plants under the emission regulations of the Clean Air Act. Running at less than full capacity, grandfathered plants currently annually emit more than 52 tons of highly toxic mercury, more than 12 million tons of acid rain-causing sulfur dioxide, nearly 6 million tons of smog-producing nitrogen oxides, and more than 2 billion tons of carbon dioxide.

Some level of emissions is an inevitable by-product of producing electricity. However, as many plants built since the Clean Air Act have demonstrated, with technology available today there is no need to maintain the current level of emissions in perpetuity. Air pollution controls and more efficient combustion technologies exist that can reduce emissions across the board.

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The deregulation of the utility industry is an important goal that can benefit all Americans. We need to ensure that these economic benefits will not be at the expense of jettisoning our country's commitment to improving air quality. Congress needs to close the powerplant loophole as part of any deregulation bill that will promote the increased use of these grandfathered power plants.

I hope you will join me in sending this message to Senators Lott and Daschle and begin drafting the roadmap to cleaner air and improved public health. Please have your staff contact Rick Duffy of my staff at 224-4242.

Sincerely,

A handwritten signature in black ink, reading "Patrick Leahy". The signature is fluid and cursive, with the first name "Patrick" and last name "Leahy" clearly distinguishable.

PATRICK LEAHY
United States Senate

United States Senate

WASHINGTON, D.C. 20510

Senator Trent Lott
Majority Leader

Senator Thomas Daschle
Minority Leader

Dear Senators:

We understand that electric utility industry restructuring legislation is quickly moving through the House of Representatives and may come up for consideration in the Senate. Deregulation of utilities is an excellent goal that can provide tremendous benefits to consumers. As many states have already moved ahead with deregulation of their utilities, it is now clear that there are some issues that would greatly benefit from legislation at the national level.

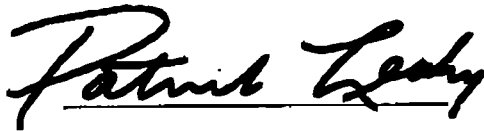
We support efforts to take up and pass legislation that will complement efforts by states to deregulate utilities. However, we would like to notify you that we will not be able to support legislation unless it addresses the issue of utilities that were "grandfathered" from air emission regulations of the Clean Air Act.

We think that not addressing power plant air pollution as a condition of restructuring would be a grave mistake. We are deeply concerned that 75 percent of the fossil-fired power plants in the United States are "grandfathered" from most requirements under the Clean Air Act. Deregulation of all utilities will drive a national race to capture market share and profit through producing the cheapest power. Unfortunately, that will in turn provide an incentive for power companies to increase generation at power plants which are exempt under the Clean Air Act. These older fossil-fired power plants emit enormous quantities of mercury, sulfur dioxide, nitrogen oxides, carbon dioxide, and other air pollutants. We feel strongly that Congress should close this loophole as part of any deregulation bill that will promote increased use of these grandfathered power plants.

- 2 -

We wanted to alert you of our concerns as legislation begins to make its way through the appropriate committees. We look forward to working with the committees and you on efforts to bring sensible legislation to the floor that addresses all aspects of utility restructuring, including our environment.

Sincerely,



cc: Senator Frank Murkowski
Chairman, Energy and Natural Resources Committee

Senator Jeff Bingaman
Ranking Member, Energy and Natural Resources Committee

**Section-by-Section Overview of S. _____
"The Clean Power Plant and Modernization Act of 1999"**

DRAFT - October 21, 1999

What will the "Clean Power Plant and Modernization Act of 1999" do?

The "Clean Power Plant and Modernization Act of 1999" lays out an ambitious, achievable, and balanced set of financial incentives and regulatory requirements designed to increase power plant efficiency, reduce emissions, and encourage use of renewable power generation methods. The bill encourages innovation, entrepreneurship, and risk-taking.

The bill encourages "retirement and replacement" of old, pollution-prone, and inefficient generating capacity with new, clean, and efficient capacity. The bill does not utilize a "cap and trade" approach. Many believe that the "retirement and replacement" approach does a superior job at the local and regional levels of protecting public health and the environment from mercury pollution, ozone pollution, and acid deposition. On a global level, the "retirement and replacement" also does a far superior job of permanently reducing the volume of carbon dioxide emitted.

What will the bill do for the environment?

The bill would prevent at least 650 million tons of carbon dioxide emissions per year. Over time, even more greenhouse gas emissions will be avoided annually as increases in power plant efficiencies exceed 50%, more combined heat and power systems are installed, and use of renewable energy sources increases. Prevention of greenhouse gas emissions of up to 1 billion tons per year may be possible. Mercury emissions will be cut from more than 50 tons per year to no more than 5 tons per year. Annual emissions of acid rain producing sulfur dioxide emissions will be cut by more than 6 million tons beyond Phase II Clean Air Act of 1990 requirements. Nitrogen oxide emissions that result in summertime ozone pollution will be cut by 3.2 million tons per year beyond Phase II requirements.

Over a 50 year period, the proposal laid out in the bill will prevent more than 30 billion tons of in carbon dioxide emissions, and maybe as high as 50 billion tons. Carbon dioxide is further addressed in the bill by authorizing expenditures for implementing known ways of biologically sequestering carbon dioxide from the atmosphere such as planting trees, preserving wetlands, and soil restoration.

Over a 50 year period, more than 2,200 tons of mercury emissions would be avoided. While this might not sound like a lot in relation to the other pollutants, consider that a teaspoon of mercury is enough to contaminate several millions of gallons of water. And over a 50 year period more than 300 million tons of sulfur dioxide and 160 million tons of nitrogen oxides will be prevented beyond the Phase II emission limits specified in the Clean Air Act of 1990.

Section 4. Heat Rate Efficiency Standards for Fossil Fuel-Fired Generating Units.

On average, fossil fuel-fired power plants in the United States operate at a thermal efficiency rate of 33%, converting just one-third of the energy in the fuel to electricity, and wasting 67% of the heat generated by burning the fuel. Increasing efficiency in converting the energy in the fuel into electricity is really the only way to reduce carbon dioxide "greenhouse" emissions from these facilities. According to the Energy Information Administration, fossil-fired power plants in the United States emit more the 2 billion tons of carbon dioxide per year (or the weight equivalent of nearly 25,000 Washington Monuments every year). This is approximately 40% of annual domestic carbon dioxide emissions.

Section 4 lays out a phased two-stage process for increasing efficiency. In the first stage, by 10 years after enactment, all units in operation must achieve a heat rate efficiency (at the higher heating value) of not less than 45%. In the second stage, with expected advances in combustion technology, units commencing operation more than 10 years after enactment must achieve a heat rate efficiency (at the higher heating value) of not less than 50%.

If, for some unforeseen reason, technological advances do not achieve the 50% efficiency level, Section 4 contains a waiver provision that allows owners of new units to offset any shortfall in carbon dioxide emissions through implementation of carbon sequestration projects.

Section 5. Air Emission Standards for Fossil Fuel-Fired Generating Units.

Subsection (a) eliminates the "grandfather" loophole in the Clean Air Act and requires all units, regardless of when they were constructed or began operation, to comply with existing new source review requirements under Section 111 of the Clean Air Act. The average "in service" date for fossil-fired generating units in the United States is 1964 -- six years before passage of the Clean Air Act. More than 75% of operating fossil-fired generating units came into service before implementation of the 1970 Clean Air Act and are subject to much less stringent requirements than newer units.

Subsection (b) sets mercury, carbon dioxide, sulfur dioxide, and nitrogen oxide emission standards for units that are subject to the 45% thermal efficiency standards set forth in Section 4. For mercury, 90% removal of mercury contained in the fuel is required. For carbon dioxide, the emission limits are set by fuel type (i.e., natural gas = 0.9 pounds per kilowatt hour of output; fuel oil = 1.3 pounds per kilowatt hour of output; coal = 1.55 pounds per kilowatt hour of output). Ninety-five percent of sulfur dioxide emissions (and not more than 0.3 pounds per million BTUs of fuel consumed), and 90 percent of nitrogen oxides (and not more than 0.15 pounds per million BTUs of fuel consumed) are to be removed.

Subsection (c) contains the same emission standards for mercury, sulfur dioxide, and nitrogen oxides as those in Subsection (b). Increased thermal efficiency will result in lower emissions of carbon dioxide, and the fuel specific emission limits at the 50% efficiency level are lowered accordingly (i.e., natural gas = 0.8 pounds per kilowatt hour of output; fuel oil = 1.2 pounds per kilowatt hour of output; coal = 1.4 pounds per kilowatt hour of output).

Furthering the public's right-to-know information on emission volumes, Subsection (e) requires EPA to annually publish pollutant-specific emissions data for each generating unit covered by the "Clean Power Plant and Modernization Act of 1999." In addition, at least once per year residential consumers will receive information from their electricity supplier on the emission volumes.

Section 6. Extension of Renewable Energy Production Credit.

Section 45(c) of the Internal Revenue Code of 1986 is amended to include solar power, and to extend renewable energy production credit to 2010 (it is currently set to expire in 1999).

Section 7. Mega Watt Hour Generation Fee, and Section 8. Clean Air Trust Fund

The Clean Air Trust Fund is similar to the Highway Trust Fund and the Superfund. Revenue for the Clean Air Trust Fund will be provided through implementation of a fee on electricity produced by fossil-fired generating units that are "grandfathered" from the Clean Air Act's Section 111 new source requirements. Utilities will be assessed at the rate of 30 cents per megawatt hour of electricity that they produce from "grandfathered" units. For residential consumers receiving power from "grandfathered" plants, the cost of the fee would average 25 cents per month. Income from the fee will be placed in the Clean Air Trust Fund to pay for: a.) assistance to workers and communities adversely affected by reduced consumption of coal; b.) research and development and demonstration programs for renewable and clean power generation technologies (e.g., wind, solar, biomass, and fuel cells); c) demonstrations of the efficiency, environmental benefits, and commercial viability of electrical power generation from clean coal, advanced gas, and combined heat and power technologies; and d.) carbon sequestration projects.

Section 9. Accelerated Depreciation for Investor-Owned Generating Units.

Under the Internal Revenue Code of 1986, utilities can depreciate their generating equipment over a 20-year period. New, cleaner and efficient generating technologies will experience shorter physical lifetimes compared to their dirtier, less efficient, but more durable predecessors. Over a 20-year timeframe, most components of new generating units will need to be replaced; some components will be replaced several times. To update the Internal Revenue Code of 1986 to reflect this change in the expected physical lifetimes of generating equipment, Section 9 amends Section 168 of the Code to allow depreciation over a 15-year period for units meeting the 45% efficiency level and the emission standards in Section 5(b) above. Section 168 is further amended to allow for depreciation over a 12-year period for units meeting the 50% efficiency level and the emission standards in Section 5(c).

Section 10. Grants for Publicly-Owned Generating Units.

No federal taxes are paid on publicly-owned generating units. Section 10 provides for annual grants in an amount equal to the monetary value of the depreciation deduction that would be realized by a similarly-situated investor owned generating unit under Section 9. Units meeting the 45% efficiency level and the emission standards in Section 5(b) above would receive annual grants over a 15-year period, and units meeting the 50% efficiency level and the emission standards in Section 5(c) would receive annual grants over a 12-year period.

Section 11. Recognition of Permanent Emission Reductions in Future Climate Change Implementation Programs.

This section expresses the sense of Congress that permanent reductions in emissions of carbon dioxide and nitrogen oxides that are accomplished through the retirement of old generating units and replacement by new generating units that meet the efficiency and emissions standards in the bill, or through replacement with non polluting renewable power generation technologies, should be credited to the utility sector and to the owner/operator in any climate change implementation program enacted by Congress. The base year for calculating reductions will be the year preceding enactment of the "Clean Power Plant and Modernization Act of 1999." The bill stipulates that a portion of any monetary value that may accrue from credits under this section should be passed on to utility customers.

Section 12. Renewable and Clean Power Generation Technologies.

This section provides a total of \$750 million over 10 years to fund research and development programs and commercial demonstration projects and partnerships to demonstrate the commercial viability and environmental benefits of electric power generation from biomass, geothermal, solar, wind, and fuel cell technologies. Types of projects may include solar power tower plants, solar dishes and engines, co-firing biomass with coal, biomass modular systems, next-generation wind turbines and wind verification projects, geothermal energy conversion, and fuel cells.

Section 13. Clean Coal, Advanced Gas Turbine, and Combined Heat and Power Generation Demonstration Program.

This section provides a total of \$750 million over 10 years to fund projects and partnerships that demonstrate the efficiency and environmental benefits and commercial viability of electric power generation from clean coal technologies (including, but not limited to, pressurized fluidized bed combustion and integrated gasification combined cycle systems), advanced gas turbine technologies (including, but not limited to, flexible mid-sized gas turbines and baseload utility scale applications), and combined heat and power technologies.

Section 14. Evaluation of Implementation of this Act and other Statutes.

Not later than 2 years after enactment, DOE, in consultation with EPA and FERC, shall report to Congress on the implementation of the "Clean Power Plant and Modernization Act of 1999." The report shall identify any provision of the Energy Policy Act of 1992, the Energy Supply and Environmental Coordination Act of 1974, the Public Utilities Regulatory Policies Act of 1978, or the Powerplant and Industrial Fuel Use Act of 1978 that conflicts with the efficient implementation of the "Clean Power Plant and Modernization Act of 1999." The report shall include recommendations for legislative or administrative measures to harmonize and streamline these other statutes.

Section 15. Assistance for Workers Adversely Affected by Reduced Consumption of Coal.

With increased power plant efficiency, less fuel will need to be burned to produce a given quantity of electricity. This section provides a total of \$1.125 billion over 15 years (\$75 million per year) to provide assistance to workers who are adversely affected as a result of reduced consumption of coal by the electric power generation industry. The funds will be administered under the economic dislocation and workers' adjustment assistance program of the Department of Labor authorized by Title III of the Job Training Partnership Act.

Section 16. Community Economic Development Incentives for Communities Adversely Affected by Reduced Consumption of Coal.

With increased power plant efficiency, less fuel will need to be burned to produce a given quantity of electricity. This section provides a total of \$1.125 billion over 15 years (\$75 million per year) to provide assistance to communities adversely affected as a result of reduced consumption of coal by the electric power generation industry. The funds will be administered under the economic adjustment program of the Department of Commerce authorized by the Public Works and Economic Development Act of 1965.

Section 17. Carbon Sequestration.

This section authorizes expenditure of \$345 million over 10 years for development of a long-term carbon sequestration strategy (\$45 million) for the United States, and authorizes EPA and USDA to fund carbon sequestration projects including soil restoration, tree planting, wetland's protection, and other ways of biologically sequestering carbon dioxide (\$300 million).

Comparison of the Power Plant Proposals – Emissions

Pollutant/Provision	Annual Emissions (1997)	Leahy Proposal Annual Emissions	Jeffords Proposal Annual Emissions	Moynihan Proposal Annual Emissions	Waxman Proposal Annual Emissions	Allen Proposal Annual Emissions
Mercury	52 tons	5 tons [Analysis: Based on 90% removal. Over a 50-year period more than 2,200 tons of mercury emissions would be avoided.]	5 tons	Study, promulgate regulations >4 yrs. after enactment. Does not specify target.	5 tons (Based on 90% removal)	15 tons (Based on 70% removal)
Carbon Dioxide (CO2)	> 2 billion tons	1 - 1.35 billion tons [Analysis: Leahy bill is estimated to reduce annual CO2 emissions by 560 million tons to 915 million tons over other proposals. For a 50-year period, total CO2 emissions would be from 28 to 45 billion tons less under the Leahy proposal.]	1.914 billion tons	not covered	1.914 billion tons	1.914 billion tons
Sulfur Dioxide (SO2)	12.5 million tons in 1997. After 2000, Phase II statutory cap of 8.9 million tons	2.9 million tons [Analysis: Leahy bill would reduce SO2 emissions 6 million tons per year beyond Phase II caps. Over a 50-year period the Leahy bill would reduce SO2 emissions by 300 million tons beyond the Phase II cap.]	3.58 million tons	4.45 million tons (equal to 50% reduction beyond Phase II cap after 2005)	3.12 million tons	2.9 million tons
Nitrogen Oxides (NOx)	5.6 million tons in 1997. EIA estimates 4.6 million tons in 2000 (at Phase II limit of .5 pounds NOx/million BTU).	1.4 million tons. [Analysis: Leahy bill sets NOx limit of 0.15 pounds/million BTU, 30% of Phase II limit. Over a 50-year period the Leahy bill would reduce NOx emissions by 160 million tons beyond the Phase II cap.]	1.66 million tons	5.4 million until 2004, 3.0 million after 2005	1.4 million tons	1.4 million tons
Cap & Trade		No. Encourages replacement" of dirty, inefficient units with new, clean, and efficient units.	yes	yes	yes, but prohibits trading for mercury emissions	yes for CO2

P.B.

NO. 107

SENATOR LEAHY WASH

2:27PM

NOV. 2, 1999

Comparison of the Power Plant Proposals – Other Features

Provision	Leahy Proposal	Jeffords Proposal	Moynihan Proposal	Waxman Proposal	Allen Proposal
Grandfather Loophole	All sources must comply with source review requirements not later than 10 years after enactment. Would apply to nearly 1,500 fossil-fired units.	no	no	For plants in operation 30 years or more, or by 5 years after enactment, whichever date is later, must comply with new source performance standards.	Eliminating the loophole is listed in the Purposes section, but specific statutory language has not been identified.
Combustion Efficiency Standards	Current industry average efficiency is 33%, with little variation between fuel types. All fossil-fired units must achieve 45% combustion efficiency (higher heating value) by not later than 10 years after enactment. Fossil-fired units commencing operation more than 10 years after enactment must achieve 50% efficiency (higher heating value). The efficiency values are correlated with fuel-specific CO2 emission standards which take into account that the carbon content of coal is greater than oil, and that the carbon content of oil is greater than natural gas.	no	no	no	no
Accelerated Depreciation of Clean, Efficient Investor-Owned Fossil-Fired Generating Units, and Equivalent Grants for Clean, Efficient Publicly-Owned Fossil-Fired Generating Units	New, efficient combustion technologies will have shorter physical lifetimes than the units currently in operation. The existing tax code depreciates generating units over 20 years. In recognition of these shorter lifetimes, the Leahy bill proposes amending the tax code to accelerate the depreciation period for 45% efficient units (and complying with all environmental requirements) to 15 years. Units meeting or exceeding the 50% efficiency standards would be depreciated over 12 years.	no	no	no	no

P.S. 3
NO. 107

NOV. 2. 1999
2:27PM
SENATOR LEAHY WASH

Comparison of the Power Plant Proposals – Other Features

Provision	Leahy Proposal	Jeffords Proposal	Moynihan Proposal	Waxman Proposal	Allen Proposal
Renewable Energy	Provides \$750 million over 10 years from the "Clean Air Trust Fund"*** established in the bill and funded by a 30 cent per mega Watt fee on electricity produced by grandfathered power plants. Funds are for R&D and commercial demonstration projects for generation from biomass, geothermal, solar, wind, and clean technologies such as fuel cells. Does not contain a mandate for a percentage of power that must be generated by renewable technologies. Extends renewable energy production credit to 2010 (expires in 1999)	Establishes renewable "portfolio standard." Requires increasing generation from renewables each year equal to no less than 20% of total non-hydroelectric generation by 2020. Funds available through "National Electric System Benefits Fund" (established in the bill and funded by a "wires charge" not to exceed 2 mills/kWh) to match state funds and programs for renewable energy sources, universal electric service, affordable electric service, energy conservation and efficiency, and R&D for these programs.	no	no	no

*** In addition to funding R& D and commercial demonstrations of renewable technologies, funds from the Clean Air Trust Fund will be used to fund programs discussed below for workers and communities, commercial demonstrations of clean coal, advanced gas, and CHP technologies, and carbon sequestration projects.

Commercial Demonstration Program for Clean Coal/Advanced Gas/Combined Heat and Power Technologies	Provides \$750 million over 10 years from the "Clean Air Trust Fund" for commercial demonstration projects and partnerships to demonstrate the environmental and efficiency benefits that can be achieved through clean coal/advanced gas/CHP technologies.	no	no	no	no
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NOV. 2. 1999 2:28PM SENATOR LEAHY WASH

NO. 107 P. 11

Comparison of the Power Plant Proposals – Other Features

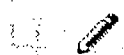
Provision	Leahy Proposal	Jeffords Proposal	Moynihan Proposal	Waxman Proposal	Allen Proposal
Provisions for Workers and Communities Adversely Affected by Reduced Consumption of Coal	Combined total of \$150 million per year for 15 years for workers and communities adversely affected by reduced consumption of coal by the electric power generation industry. Worker programs are administered through the economic dislocation and adjustment assistance program of Title III of the "Job Training Partnership Act." Community funds are administered through the economic adjustment program authorized by the "Public Works and Economic Development Act of 1965."	no	no	no	Same as the Leahy bill.
Right-to-Know Provisions	Requires that at least once per year that electricity suppliers provide customers with pollutant-specific information on the volume of emissions. Also requires that EPA annually publish electronically and in hard copy pollutant-specific emissions data for each unit covered by the Leahy bill.	Requires disclosure of information for consumers on generation source portfolios, emissions data, and price terms. Directs DOE to consult with other agencies and then promulgate regulations on reporting frequency, content, and method.	Requires that auctions of allowances be open to any person. A report on various environmental indicators shall be submitted to Congress not later than 12/31/2008. This report will be publicly available. Report on deposition research would be submitted to Congress not later than 9/30/2001.	no	Same as Leahy bill.
Carbon Sequestration	Provides a total of \$345 million over 10 years to develop a long-term carbon sequestration strategy for the U.S. (\$45 million over 3 years) and to fund projects including soil restoration, tree planting, wetland's protection, and other ways of biologically sequestering carbon dioxide (\$300 million over 10 years). Projects under this section cannot be used to offset reductions otherwise mandated by the Leahy bill.	no	no	no	Same as the Leahy bill.

Comparison of the Power Plant Proposals – Other Features

Provision	Leahy Proposal	Jeffords Proposal	Moynihan Proposal	Waxman Proposal	Allen Proposal
NOV. 2. 1999 2:28PM SENATOR LEAHY WASH P. 12 Recognition of Permanent Emission Reductions in Future Climate Change Implementation Programs	Expresses the sense of the Senate that permanent reductions of CO2 and NOx accomplished through retirement and replacement of old, dirty generating units with units that meet the efficiency and emissions requirements of the bill should be credited to the utility sector and the owner in any climate change implementation program enacted by Congress. The bill stipulates that a portion of any monetary value that may accrue from credits under this section should be passed on to utility customers.	no	no	no	Same as the Leahy bill.
Other Utility Deregulation Provisions	no	Self-generation and net Metering			

THIS SECTION TO BE FINISHED NEXT WEEK

11/12/99 02:51:56 PM



Janet Anderson
11/12/99 02:51:56 PM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP

cc: Angela C. Mizeur/WHO/EOP@EOP, Jefferson B. Seabright/WHCCTF/EOP@EOP

Subject: weekly

- Fall out from the NSR suits announced by Browner/Reno last week has grown. Utilities are pushing an amendment to an appropriations bill (CJS most likely) that would grant immunity from criminal penalties on any actions other than the ones named in the complaints/NOVs. They indicate they have met with a fair amount of support and the more time they have to work it, the better their chances. More importantly, industry (not just coal utilities) are concerned about the signal these suits send -- some of them are for the type of "improvements" that increase efficiency (e.g. new superheater design) and which companies undertook as part of the Administration's voluntary action programs. Unfortunately, this goes right back to the VP's meeting with utility CEOs at which they told him that environmental regulations needed to be updated for more efficiency improvements to occur (they thought the ones already done were within the law).
- Next phase of analytics underway by DOE/EPA on cost/structure issues for power plant retirement/replacement. So far, reasonable agreement on parameters, but needs refinement before decisions can be made; should have next round in week to ten days.



Department of Justice

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



FOR IMMEDIATE RELEASE
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EPA: (202) 260-1387

U.S. SUES ELECTRIC UTILITIES IN UNPRECEDENTED ACTION
TO ENFORCE THE CLEAN AIR ACT
Complaints Filed After One of the Largest Enforcement Investigations in EPA History

WASHINGTON, D.C. - The Justice Department, on behalf of the EPA, today filed seven lawsuits against electric utility companies in the Midwest and South, charging that 17 of the companies' power plants illegally released massive amounts of air pollutants for years, which have contributed to some of the most severe environmental problems facing the United States today. The EPA today also issued an administrative order against the Tennessee Valley Authority, charging the federal agency with similar violations at seven plants.

The seven separate suits allege that the electric utility companies -- American Electric Power, Cinergy, FirstEnergy, Illinois Power, Southern Indiana Gas & Electric Company, Southern Company, Tampa Electric Company -- or their subsidiaries, and the TVA, violated the Clean Air Act by making major modifications to many of their plants without installing the equipment required to control smog, acid rain and soot.

"When children can't breathe because of pollution from a utility plant hundreds of miles away, something must be done," said Attorney General Janet Reno. "Today's actions will help clean the air and make us breathe a little easier."

For years, the 24 power plants have operated without the best available emissions-control technology, increasing air pollution near the facilities and far downwind of the plants, along the Eastern Seaboard. In addition to the lawsuits and administrative order filed today, the EPA issued notices of violations to the utilities, naming an additional eight plants where the agency maintains similar violations occurred.

The 32 plants targeted today are located in Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Mississippi, Ohio, Tennessee, and West Virginia.

"As a result of one of the largest enforcement investigations in EPA history, we are today taking action to cut illegal and excessive air emissions from 32 coal-fired power plants throughout the Eastern half of the United States," said EPA Administrator Carol M. Browner. "This action will dramatically reduce the harmful smog and acid rain that directly threatens public health and the environment throughout the Midwest and up and down the East Coast."

By taking this unprecedented action, the United States aims to reduce dramatically the amount of sulfur dioxide, nitrogen oxides, and particulate matter that electric utility plants release into the atmosphere. The lawsuits -- filed in U.S. District Courts in Atlanta, Indianapolis,

Tampa, East St. Louis, Ill., and Columbus, Ohio -- seek to force the facilities to install appropriate air pollution-control technology. Similarly, EPA's order directs TVA to install control technology that will significantly reduce SO₂ and NO_x emissions.

The United States will seek significant civil penalties from all these violators. The Clean Air Act authorizes civil penalties of up to \$25,000 for each day of violation at each plant prior to January 30, 1997, and \$27,500 for each day thereafter.

Power plants existing at the time the Clean Air Act was amended in the late 1970s were "grandfathered." Therefore, utility companies were not required to retrofit those existing plants with new air pollution control equipment, unless the utilities undertook major modifications of those plants. The government asserts that the utilities each made major modifications to their plants in order to extend their lives and avoid the cost of building new plants. These projects included replacing large portions of the boilers that are the heart of the plants. Many of these actions cost tens of millions of dollars and took years to complete. Under the Clean Air Act, modifications of this kind require installation of the "best available control technology," but the utilities did not do so.

The utilities' failure to install this equipment resulted in tens of millions of tons of sulfur dioxide, nitrogen oxides, and particulate matter illegally emitted into the air, according to the government, leading to adverse environmental and health impacts. Each year, these plants release nearly three million tons of pollutants -- more than two million tons of sulfur dioxide (SO₂) and almost one million tons of nitrogen oxides (NO_x).

Collectively, electric utility plants in the United States account for nearly 70 percent of sulfur dioxide emissions each year and 30 percent of nitrogen oxides emissions. In addition to detrimental health effects on asthma sufferers, the elderly and children, power plant emissions have been linked to forest degradation, waterway damage, reservoir contamination, and deterioration of stone and copper in buildings.

- ◆ Sulfur dioxide interacts in the atmosphere to form sulfate aerosols, which can travel long distances through the air and can be inhaled. The inhalation of high levels of sulfate aerosols is associated with increased sickness and mortality from lung disorders, such as asthma and bronchitis.
- ◆ Nitrogen oxides are major producers of ground-level ozone, or smog, which can decrease lung function -- especially among children who are active outdoors -- and aggravate respiratory problems. Nitrogen oxides are also transformed into nitrogen dioxide, a dangerous pollutant that can constrict lower respiratory passages, create difficulty in breathing, and weaken immune systems.
- ◆ Sulfur dioxide and nitrogen oxides interact in the atmosphere with water and oxygen to form nitric and sulfuric acids, commonly known as acid rain. Acid rain, which also comes in the form of snow or sleet, "acidifies" lakes and streams and damages trees at high elevations. It also accelerates the decay of building materials and paints, including irreplaceable buildings, statues, and sculptures that are part of our nation's cultural heritage.

- ◆ **Particulate matter** is often called soot. Breathing high concentrations of particulate matter can damage lung tissue and contribute to cancer and respiratory disease.

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99-524



EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY

~~Bob~~ Perciasepe

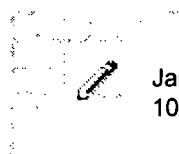
cell:

2021744.1401

and ask Guzy about
EPA opinions re: delegation
etc.

Lisa, George, Steven 8/17/99

- 1st issue: is it up to delegated authority?
 - take out ~~the~~ ^{any} subsection, is it OK? (conceptually)
 - EPA has done numerous voluntary programs of this nature. ("Project XL")
- 2nd issue: with role
 - no problem / ~~these~~ ^{with}
- 3rd issue: is it violation of Gwaltney rider?
 - "solely"?
 - no enforcement anyways - except cut only or change law
 - * - Bigger worry is EPA CDM workshops / training workshops etc. Don't draw attention.
- 4th issue: keeping separate from enforcement.



Janet Anderson
10/21/99 11:14:04 AM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP
cc: Angela C. Mizeur/WHO/EOP@EOP
Subject: Trigen mtg

Issues for discussion at today's meeting:

- drop current CHP investment tax credit and replace with more meaningful proposal (may be able to go above current \$400 M level); a production tax credit for CHP? (how many MW currently installed?) Is 0.5 cents/kWh make a difference? What incentives would you design?
- is the reduction to 15 year depreciation meaningful or is this still a barrier?
- output-based allocations of NOx allowances; we will raise this with EPA colleagues to find options
- steel industry is all geared-up over CHP; are these guys beating down your doors? how much currently exists within that industry? Is this mainly a push for new coke-making facilities?
- same question for chemicals

Roger, I think this will keep us focused on what we need to hear from them. I'll fax over a paper from Tom Jensen on the NOx allocation issue (he called me about it yesterday - EPA has ignored their - and many others' - pleas to issue allowances on an output basis to reward efficiency). Also, they may want to say thanks for asking questions/persistence on the GSA project. I've encouraged them to pursue the rfi/project definition with GSA.

J.

Last year the EPA promulgated its SIP call, requiring NO_x reductions from large sources by 2003. The EPA recommended (but could not require) that states meet the reductions through a cap and trade program. Many people urged the EPA to recommend output-based allocation of allowances for the SIP call. In the end, the EPA said some positive things about output but said that they did not have the appropriate data or methodology to do output. They recommended an input approach and said that they would develop an approach to do output. Among other things, they said that they would provide guidance for the states to do output-based allocation as soon as sometime in 1999.

The courts have put the SIP call on hold and the EPA is currently focusing on the Section 126 petitions under which northeastern states have sued to require midwestern states to make NO_x reductions similar to those required in the SIP call. One difference is that the Section 126 rule will be a Federal program in which the EPA can determine how reductions will be regulated. The EPA has said that they will use a cap and trade approach and that the rule would be released at the end of November. Over the last year, industry (including Trigen) has worked with the EPA to address their questions on output measurement and allocation. To our knowledge, all of the questions have been answered.

We received word today that the EPA has decided to go ahead with input-based allocation for the 126 rule with a promise to move to output at the next reallocation. This reallocation would not take effect until 2008. The EPA is also trying to move up the schedule for releasing the rule and may send it to OMB as soon as next week. This decision is very disappointing and counterproductive. Some of our responses are listed below:

- This is what the EPA said last year – output is good but we don't know enough. They committed to work with industry to solve the problems and provide guidance for states to do output-based allocation during 1999. Industry helped out and addressed the questions, now EPA says they need five more years.
- Three states have already promulgated output-based allocation approaches. It is embarrassing for the EPA to say that they can't do as well.
- For this pass, the first output-based allocation will take effect in 2008 at the earliest – almost 10 years from now. That is too late to influence behavior if we are starting carbon compliance in 2008. No one will take output seriously until EPA puts out a real proposal – on this schedule probably no sooner than 2005.
- The second, output-based phase may never happen. If the EPA is successful in upholding the SIP call, approved SIPs will replace the 126 rule before 2008. In developing their SIPs, states will be left with an updating input approach that EPA proposed in the SIP Model Rule and is reinforcing in this proposal. EPA will never have a chance to develop or promote output-based allocation.

Troutman Sanders LLP

- In the interim EPA is promoting an updating input system. This is the worst possible option since it provides an incentive for energy consumption. It is also the worst possible template to provide to the states for future actions.
- The message this sends is that output is too complicated for EPA to figure out. That will be a strong disincentive for other states to do something on output on their own.
- With a five year update cycle and if the base year is 1997-98, we will have units getting allocations in 2007 based on heat input from 10 years earlier. This is particularly problematic since it spans the period of expected massive plant turnover due to restructuring. The many new plants that are expected to come on line will be receiving prorated shares of new source set asides while owners of old plants will be subsidized based on their heat input for an earlier era, even if the old plants have shut down. This will provide additional economic *disincentive* for new plant development.
- The end result is a continuation of past EPA behavior - luke warm verbal support for efficiency while promulgating rules that provide real economic incentives for *inefficiency*.

CASTEN POINTS

- ⇒ Runs Counter To Administration Policy On
 - * support for new clean plants
 - * competition
 - * efficiency, multipollutant reductions
 - * EPA NSPS output approach
 - * climate

- ⇒ Reinforces Argument That You Are Coddling Grandfathered Plants
 - * 10 year reprieve
 - * reinforce market power and provides subsidies

- ⇒ Provides For A Less Clean Environment At A Greater Cost
 - * focuses on end-of-pipe control over pollution prevention

- ⇒ Output Approach Is Implementable
 - * NE States
 - * No perfect data

- ⇒ Not Completely Positive For Trigen But It's The Right Policy

TRIGEN ENERGY CORPORATION

One Water Street

White Plains, NY 10601

914-286-6600, Fax 914-948-9157/9190

JOB _____

SHEET NO. _____

OF _____

CALCULATED BY _____

DATE _____

CHECKED BY _____

DATE _____

SCALE _____

120 is about to be announced with Input Standards,
Allocating the right to emit NO_x based on history of
pollution

I feel this is a mistake worth fighting to
Have ~~24~~ 40 points

1) IT runs counter to The President's policy in several
ways

2) IT reinforces argument that CA is coddling
old plants with some truth

3) IT will provide less env. cleanup at a marginal
greater cost than Output Standards
AND ~~will continue to penalize~~

Cost more
to Cap NO_x
and do water
and other
pollutants on CA

4) It continues the ~~present EPA position~~
major characteristic of ~~EPA Regulatory Policy~~
not penalizes efficiency

5) Output is ~~more~~ flexible — there is NO reason
to take the form —

Let me elaborate very quickly

1) Counter to President's policy

- Has supported new plants — this makes it tougher
- Has recognized competition is a big part of
Climate change negotiation — this too
further advantages the states and plants
- EPA has established NEPS for water bodies based
on output — now say they look water data

2) Coddling old plants

SEIZING AN OPPORTUNITY: CUTTING HARMFUL AIR POLLUTION

Electricity generation is the largest source of air pollution in the U.S., releasing more than two thirds of the nation's sulfur dioxide, and approximately one third of carbon dioxide, nitrogen oxides, and mercury. These pollutants contribute to disease and premature death from smog, soot, and toxic air pollution, global warming, and water pollution. Many of these pollutants come from the 70% of power plants that are more than 30 years old, and which are specifically exempted from clean air rules requiring the cleanest technology. These plants can emit air pollution at four times the rate of new facilities.

This strategy is designed to create the clean energy production that America needs to compete and win in the 21st Century. It is an integrated strategy for four pollutants of concern, rather than looking at each pollutant in isolation. It reinvents air pollution regulation for electric utilities, giving business the flexibility to achieve the most cost-effective reductions and the certainty about environmental requirements to compete in a deregulated marketplace. It gives Americans the clean air they deserve to breathe and makes a down payment on our greatest environmental challenge of the 21st Century – global warming.

COMPREHENSIVE POLLUTION REDUCTION USING MARKET MECHANISMS

Legislation amending the Clean Air Act would be needed to establish a single national standard or emissions cap for four pollutants – nitrogen oxide, sulfur dioxide, carbon dioxide and mercury. The bill also would create an emissions trading program for all pollutants, except mercury. The new standards would lower nitrogen oxide emissions by expanding existing requirements nationally and annually, lower sulfur dioxide emission levels 50% from current federal requirements, lower mercury 50% from 1990 levels, and return carbon emissions to their 1990 levels. All power plants must meet the new requirements by 2008.

IMMEDIATE ACTION PROGRAM

For forward-looking utilities that are prepared to reduce their emissions now, we would use existing Clean Air Act authority to create the regulatory framework to make comprehensive reductions. This approach would replace existing incremental requirements for facilities with new commitments to reduce these pollutants. Such an approach could provide regulatory certainty to the utility industry as it transitions to a deregulated marketplace. This step represents only an interim measure, as all utilities would be unlikely to participate in such a voluntary program.

CREATIVE FINANCING FOR 21ST CENTURY CLEAN POWER

The nation must move to 21st Century generation technology. To promote this transition, the federal government would create a new financing mechanism, the Clean Air Bond, to accelerate conversion of older power plants. The federal government would pay the interest on privately issued bonds which would finance the conversion of older facilities to cleaner, highly efficient, technologies that could use a broad mix of fuels. This new creative financing mechanism would be highly leveraged as the government pays only the interest on the bonds, and the private sector raises the principal for the investment.

SEIZING AN OPPORTUNITY:

CUTTING CONSUMERS ELECTRIC BILLS AND HARMFUL AIR POLLUTION

The next five years represent an unparalleled opportunity to cut electricity bills for consumers and to cut air pollution from power plants. What is needed is government leadership for a strategy that integrates environmental and economic policy to benefit consumers' pocketbooks and their health at the same time. This paper identifies a four-part strategy that revamps both economic and environmental regulation of electric utilities to achieve these benefits for America's working families.

Electricity generation is the largest source of air pollution in the U.S., releasing more than two thirds of the nation's sulfur dioxide, and approximately one third of carbon dioxide, nitrogen oxides, and mercury. These pollutants contribute to disease and premature death from smog, soot, and toxic air pollution, global warming, and water pollution. Many of these pollutants come from the 70% of power plants that are more than 30 years old, and which are specifically exempted from clean air rules requiring the cleanest technology. These plants can emit air pollution at ten times the rate of new facilities.

STEP ONE -- ADOPT THE ADMINISTRATION'S ELECTRICITY RESTRUCTURING PROPOSAL

The Administration's comprehensive electricity competition plan is built on the principle that all consumers should benefit from the ability to choose their own electricity supplier. It makes necessary changes to federal law to provide customer choice, to spur competition, to protect consumers and to promote a diversity of energy sources. Twenty-three states have already acted on restructuring proposals to allow consumers to choose among competing power suppliers. Almost every other state is considering it. But to ensure these benefits for all consumers, the federal government must act.

The Administration's proposal would save consumers in all 50 states at least \$20 billion per year. Between lower electric bills and lower costs for goods and services, the typical family of four could save \$232 per year. It empowers all consumers to reap the full benefits of competition, makes the electric grid more reliable, promotes more efficient and competitive interstate markets, removes federal roadblocks to state competition plans, and enhances the environmental benefits associated with competition, including required use of renewable energy and other measures that would reduce greenhouse gas pollutants 40-60 million tons.

STEP TWO -- REINVENT CLEAN AIR RULES AND SET VOLUNTARY LIMITS ON POLLUTANTS

The current approach to clean air regulation, which emphasizes incremental air quality improvements as plants are incrementally modernized, should be replaced. The new strategy would give utilities fewer short-term regulatory requirements in exchange for a long-term commitment to reduce emissions of concern -- nitrogen oxides, sulfur dioxide, mercury, and

carbon. Such an approach could provide regulatory certainty to the utility industry as it transitions to a deregulated marketplace. Such an approach may be possible under current law, although any participation would be voluntary. As such, this step represents only an interim measure as all utilities would be unlikely to participate in such a voluntary program.

STEP 3 -- MANDATORY STANDARDS ON POLLUTION

To build on the voluntary approach proposed in Step 2, legislation would be needed to establish a single national standard or emissions cap for four pollutants – nitrogen oxide, sulfur dioxide, carbon dioxide and mercury. This approach could be done either by adding it to the Administration's electricity restructuring bill, or by amending the Clean Air Act. Legislation introduced by Senators Lieberman and Jeffords, for example, requires that all combustion power plants larger than 15 megawatts must meet requirements under the cap by 2005. It is designed to return carbon dioxide emissions from these facilities to their 1990 levels. The bill also creates an emissions trading program for all pollutants, except mercury, based on a generation performance standard.

STEP FOUR -- ACCELERATE THE CONVERSION OF OLDER POWER PLANTS TO CLEAN, MODERN TECHNOLOGY WITH FEDERAL INCENTIVES.

To promote the accelerated retirement of these older power plants or the conversion of those plants to substantially cleaner technologies, the government could offer a financial incentive to those utilities that retire generating capacity or convert it to cleaner technologies. In virtually all cases, retirements or conversions would occur at coal-fired power plants, and it is anticipated that any new power to replace retirements or conversions would be combined-cycle natural gas plants. This could also be done through the tax code or as a competitive grant program, with awards to those facilities which promise the greatest emission reductions for the least cost. Under either approach, it is possible that the government could pay for reductions that would have happened anyway.

October 19, 1999

MEMORANDUM FOR THE VICE PRESIDENT

THROUGH: Elaine Kamarck

**FROM: George T. Frampton, Jr.
Bradley M. Campbell**

SUBJECT: Environmental Speech in New Hampshire: October 18

Your senior advisors have identified three major themes and goals that could be addressed in your first major environmental speech, and a suite of new policy proposals that addresses each set of themes and goals in terms that have strong resonance in New Hampshire and across the country.

There is no consensus as to whether you should announce all of these initiatives this Thursday in New Hampshire, or focus the speech on one major proposal and save one or more new proposals for more thorough vetting and a later speech opportunity.

The three themes and goals that could be included in this first address are:

- **Clean Air:** Clean up dirty power plants within ten years; reverse current epidemic rates of childhood asthma, which are closely linked to air quality;
- **Clean Water:** End beach closures nationwide by increasing federal investments in wastewater treatment; end contamination of groundwater by MTBE (Methyl Tertiary-Butyl Ethyr) while creating new markets for ethanol; strengthen the Clean Water Act.
- **Parks and Open Space:** Propose a "Penny for Parks" – dedicating one cent of the current Federal gasoline tax to the support of Federal, state, and local parks. This would build on your "Better America Bonds" proposal and other elements of the Livability initiative.

Each of these themes and goals offers the opportunity to highlight a very strong Administration record under your leadership, as described below. Taken together, the proposals here encompass the entire range of your environmental agenda: clean air, clean water and drinking water, toxics, global climate change, and reinvention/market approaches.

Clean Air

Proposal: "An End to Dirty Power Plants." The centerpiece of the address would be a commitment to stop pollution from the Nation's dirtiest (primarily Midwest) power plants, initially through market mechanisms, but reinforced by an ultimate regulatory deadline.

Background: These plants indisputably: impair New England's air quality; poison its waters with acid rain, mercury, and nitrogen; and contribute to global climate change. Both air and water pollution from these plants has been a major concern in New England.

Elements: 1) Tax incentives to clean up carbon and pollutants from these plants earlier than current law would require, including incentives for fuel switching (to gas and clean coal), pollution controls, and (where appropriate) early retirement for the dirtiest plants; 2) a statutory and regulatory timetable to ensure cleanup of emissions (through an integrated approach that would reduce both criteria pollutants and carbon) from these plants within 10 years; and 3) use of current regulatory authority (a major regulatory determination for utilities is due at the end of this Administration) to force the cleanup if Congress fails to enact the needed market mechanisms.

Cost: Primary reliance on incentives will require at least three billion dollars in tax credits over the target ten-year period, some portion of which might be provided reallocating funds from current (but unenacted) CCTI proposals.

Pros:

- This is a bold proposal to tackle a longstanding environmental problem.
- Satisfies a major objective of the environmental community, particularly groups focused on climate change.
- Recognizes that accelerated cleanup elimination of these dirty plants cannot be achieved through regulation alone.

Cons:

- May create a backlash in the Midwest (regarding electricity prices) and in coal states.
- May generate concerns about the impact of this proposal on pending EPA enforcement actions.
- Reliance on market mechanisms may dilute "polluter pays" message.

Proposal: "Take Dirty Buses off our Streets." Retarget current transportation funding to take all dirty buses off of city streets within five years, to be replaced with electric and alternative fuel vehicles.

Background: Dirty diesel buses symbolize the impacts of dirty air on urban and suburban quality of life and discourage use of mass transit alternatives.

Cost: Scalable, although the total new cost could be held to \$500 million over five years by reallocating current transportation funding.

Pros:

- A concrete, nonregulatory step with immediate impact in urban areas.
- Highlights recent EPA regulations to clean up diesel fuels.

Cons:

- May be dismissed as a relatively minor contribution to cleaner air.
- May generate concern among construction trades about diversion of highway funding.

Proposal: "Stopping childhood asthma at the source." Build on current EPA/HHS asthma initiative through targeted funding to identify communities with the highest rates of asthma linked to poor air quality, and to use health data to target immediate pollution reductions from local sources.

Background: Amplifies a current EPA/HHS initiative by linking local asthma problems to air pollution reductions.

Cost: Scalable, ramping up to \$100 million annually.

Pros:

- Strengthens linkage of clean air initiatives to immediate concerns of parents.

Cons:

- Raises scientific debate over strength of link between air quality and asthma.
- May be difficult to distinguish from current Administration initiatives.

Clean Water and Drinking Water for our Communities

Proposal: Double our investments in protecting and restoring clean water and drinking water sources, helping local governments meet clean water goals. As distinct from pending Republican proposals, we would restore Davis-Bacon requirements for all projects supported directly or indirectly by the Clean Water State Revolving Funds (SRFs), and expand the available of these funds to help farming and ranching communities. These new investments will achieve a goal of ending beach closures within a decade as part of a broader strategy of meeting the Clean Water Act's vision of making all waters fishable and swimmable.

Background: Governors, Mayors, and the construction trade unions all have stressed to you the paramount importance of increasing funding for the SRFs to keep pace with the need to replace aging wastewater infrastructure in our Nations cities and counties. By contrast, the President's recent budgets have cut appropriations requests for the SRFs, on the assumption that the funds are approaching "full capitalization" at an adequate level. That assumption has been undercut by recent surveys of wastewater infrastructure needs, and as a result Republican and bipartisan SRF bills would double the past authorization level to level to \$3 billion.

Cost: Doubling current appropriations of \$1.35 billion to the clean water SRFs would take place in increments of approximately \$150 million, for a total cost of \$4 to \$6 billion over ten years.

Pros:

- Meets the well-documented need for increased funding for wastewater infrastructure across the country, which is a particular concern in New Hampshire.
- Satisfies a primary funding objective of mayors, local governments, and organized labor.
- Credibly meets the challenge of ending beach closures, which have immediate salience for most Americans.
- Eliminates vulnerability created by pending Republican SRF reauthorization proposals that dwarf the Administration's budget requests.

Cons:

- Consumes a significant portion of the available budget for campaign proposals.
- Highlights failure to fund needs adequately in this Administration.

Proposal: Commit to the elimination of MTBE as a gasoline additive, and replace the current Clean Air Act requirement for oxygenates in fuels with a renewables (i.e. ethanol) requirement that will clean our air while creating new markets for farmers.

Background: New Hampshire is typical of the many states, including California, whose groundwater resources have suffered contamination by MTBE, an oxygenate used as a fuel additive to clean up vehicle emissions. A recent survey detected MTBE in a significant percentage of New Hampshire's groundwater wells, traceable to leaking underground fuel storage tanks. Merely eliminating the oxygenates requirement in the Clean Air Act that prompted wide use of MTBE as a fuel additive, however, would undermine markets for ethanol (another oxygenate) that are vital to commodity growers. This proposal, which would help protect groundwater while expanding ethanol markets, reflects legislative proposals by Minority Leader Tom Daschle (D-SD) and others.

Costs: There are no significant budget impacts associated with this proposal.

Pros:

- Addresses an immediate public concern in New Hampshire and California.
- Answers a major policy objective of Midwest corn growers and ethanol producers

Cons:

- Legislative proposals to address this issue have not been fully developed or introduced, meaning that we will defer specifics to legislative resolution.
- May raise concern about impact on gasoline prices if, as is unlikely, ethanol must replace MTBE in all markets.

Proposal: Propose reauthorization and strengthening of the Clean Water Act (CWA) limited to four essential fixes: increasing funding levels (see above); eliminating court-created loopholes in wetlands protection; restoring citizens' rights to enforce CWA requirements; and providing authority for regulation of polluted runoff where states fail to act (i.e. fail to meet TMDL requirements current law).

Background: Like many environmental laws, authorization for the CWA expired many years ago, and a Presidential veto threat blunted a 1995 attempt to couple reauthorization of the CWA with amendments to weaken the law. The Clean Water Action Plan you initiated on the 25th anniversary of the CWA uses current authority and increased funding to meet new clean water challenges, especially the challenge of polluted runoff and factory farms, but the law must be modernized if we are to meet the goal of swimmable and fishable waters.

Cost: None, except as outlined for preceding proposal.

Pros:

- Establishes a Clean Water agenda that requires no new funding.
- Addresses a major objective of the environmental community.
- Creates opportunity to highlight Republican efforts to weaken the law.

Cons:

- Little news value. Reiterates a longstanding set of Administration objectives.

Saving America's Great and Unspoiled Places

Proposal: "Penny for Parks." Permanently dedicate a penny of gasoline taxes for acquisition and support of parks, with a fair allocation of revenues among national, state, and local parks. This could be achieved by shifting one cent of the current tax to a dedicated fund, or by adding a penny to the tax (undesirable in light of current gasoline prices). This would generate approximately \$1.2 billion in revenue annually. This could

be coupled with “Tax Cuts for Conservation,” providing capital gains and estate tax credits (and possible capital gains tax reductions) for putting land into conservation easements that preserve open space and farmland.

Cost: “Penny for Parks” is revenue-neutral. “Tax Cuts for Conservation” is scalable in a range from \$50 to \$100 million annually.

Pros:

- A bold proposal that creates a permanent funding mechanism for parks and open space.
- Creates new elements of the livability initiative, and an opportunity to highlight Republican failure to fund Lands Legacy.
- Inclusion of tax relief package would bolster your tax cut package.

Cons:

- May generate concern from organized labor about possible cuts in highway funding.
- May invite criticism from Senator Gregg that the Administration has failed to endorse his similar conservation tax relief proposals.

SEIZING AN OPPORTUNITY: CUTTING HARMFUL AIR POLLUTION

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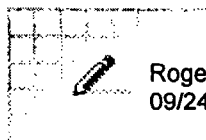
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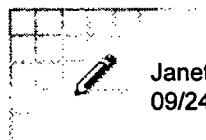
 Roger S. Ballentine
09/24/99 04:19:44 PM

Record Type: Record

To: George T. Frampton/CEQ/EOP@EOP
cc: Linda Lance/CEQ/EOP@EOP, Janet Anderson/WHCCTF/EOP@EOP
Subject: utilities

I guess the folks we met with yesterday didn't know about this, but this is our worst case scenario and exactly what these utilities asked the VP for help with a year ago. we should discuss.

----- Forwarded by Roger S. Ballentine/WHO/EOP on 09/24/99 04:18 PM -----

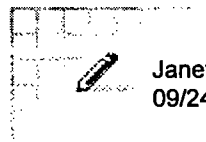
 Janet Anderson
09/24/99 01:46:02 PM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP
cc:
Subject: utilities

My e-mail skills seem to have degraded today.

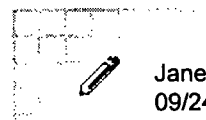
----- Forwarded by Janet Anderson/WHCCTF/EOP on 09/24/99 01:44 PM -----

 Janet Anderson
09/24/99 01:22:57 PM

Record Type: Record

To:
cc:
Subject: utilities

----- Forwarded by Janet Anderson/WHCCTF/EOP on 09/24/99 01:05 PM -----

 Janet Anderson
09/24/99 01:05:27 PM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP

cc:

Subject: utilities

The "offer" to the utilities was SCR, scrubbers, plus better particulate control on EVERY unit within ten years. This is characterized as LAER (lowest achievable emission rate)/BACT (best available control technology). The number mentioned for NOx was 0.1lbs/MBtu (the lowest the NOx SIP call has asked for is .15). If utilities make these types of investments on their units, it sends us totally in the wrong direction for CO2. A unit adding these technologies will incur about a 5% loss in efficiency/increase in CO2. Now, even under the type of program we have envisioned, these technologies will be installed on some units, but would leave more flexibility for companies to consider other fuels and efficiency improvements as well as planned retirements. Once the \$ has been spent, companies will fight the consideration of **any** other environmental concerns until they recover their capital (12-15 years).

I don't believe companies will work with enforcement on any settlement along these lines. They want to negotiate on any prospective reductions with Perciasepe. The one possible exception is Cinergy; they may announce an offer (similar to what we've thought about) plus a reduction in carbon. They have more flexibility on carbon because they are all coal and aren't expecting growth.

I'm disappointed by this development. I cannot see how proceeding puts the agency at risk. These guys may indeed be "forum shopping", but the ultimate decision about how much reductions remains with the Administration. Pragmatically, I fear this stance jeopardizes certain improvements in the environment and public health.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460**

DRAFT

DRAFT

**OFFICE OF
THE ADMINISTRATOR**

**STATEMENT BY CAROL M. BROWNER, EPA ADMINISTRATOR
February 29, 2000**

Today we are announcing that a settlement agreement has been reached between the Clinton/Gore Administration and TECO – the Tampa Electric Company. The agreement is the first to take place under EPA's national enforcement action against coal fired-powered plants for violations of the Clean Air Act.

The TECO settlement is a benchmark in the Clinton/Gore Administration's efforts to provide Floridians the greatest possible protection of their public health and their environment.

Today's settlement specifically means significant reductions in the harmful air emissions that cause smog, soot and acid rain.

Today's settlement means that action to reduce air pollution will begin at TECO's two largest facilities by 2001. The company must continue steady reductions on a fixed schedule through 2010.

Today's settlement means that TECO will have to meet tough, truly protective emission standards for the worst pollutants. Hundreds of thousands of tons of harmful pollutants like nitrogen oxides, sulfur dioxide and particulate matter will be removed from the skies over Florida. These pollutants cause serious respiratory disorders and even premature death. They also can damage crops and the environment.

Today's settlement means that TECO will also pay \$3.5 million in civil penalties and another \$10 million for environmentally beneficial projects designed to mitigate the impact of their pollution.

"In other words, it means that TECO will have to clean up quickly, TECO will have to clean up to levels that are truly protective of public health and the environment, and TECO will have to take action to mitigate the pollution it has already caused," Browner concluded.

We are pleased that the company has signed this settlement. And we hope that other utilities follow their example and bring significantly improved air quality to many other areas across America.

-30-30-30-



Department of Justice

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



FOR IMMEDIATE RELEASE
TUESDAY, FEBRUARY 29, 2000
TDD (202) 514-1888

DOJ: (202) 514-2008
EPA: (202) 260-4355

U.S. SETTLES LANDMARK CLEAN AIR ACT CASE AGAINST ELECTRIC UTILITY **Agreement Marks a Major Step in National Enforcement Initiative**

WASHINGTON — The Justice Department and the Environmental Protection Agency today announced the settlement of a major Clean Air Act enforcement action against the Tampa Electric Company that requires the company to significantly reduce harmful air pollution from its power plants. This agreement is the first to result from a national enforcement action aimed at cutting emissions from coal-fired power plants.

In November 1999, the government charged that Tampa Electric Company and six other utilities violated the law at their power plants by making major modifications to the plants without installing equipment required to control smog, acid rain and soot. The settlement filed today in U.S. District Court in Tampa is unprecedented in its scope, and it marks a major step in the government's ongoing initiative to stop pollution illegally released from coal-fired power plants.

"The Tampa Electric settlement is the first reached under EPA's national enforcement action against coal-fired power plants for violations of the Clean Air Act," said EPA Administrator Carol M. Browner. "The Tampa Electric settlement represents a landmark in the Clinton-Gore administration's efforts to provide the people of Florida with cleaner, healthier air. It ensures the greatest possible protection of public health from air pollution for Floridians and their environment. We are hopeful that other utilities will follow Tampa Electric example, and help bring similar clean-air benefits to many other areas in this country."

"Because of this settlement, the environment will be spared hundreds of thousands of tons of pollution that would have been released from Tampa Electric Gannon and Big Bend power plants," said Lois J. Schiffer, Assistant Attorney General for Environment and Natural Resources. "The company showed a willingness to act quickly to improve quality of the air that Tampa residents breathe. We want other utilities to follow Tampa Electric's lead."

The settlement requires Tampa Electric to pay a \$3.5 million civil penalty. Under the agreement, Tampa Electric will install permanent emissions-control equipment to meet stringent pollution limits; implement a series of interim pollution-reduction measures to reduce emissions while the permanent controls are designed and installed; and retire pollution emission allowances that Tampa Electric or others could use, or sell to others, to emit additional pollution into the environment. The settlement also requires the company to spend between \$10 and \$11 million on environmentally beneficial projects in the region designed to mitigate the impact of emissions from the company's plants.

None of the settlement requirements is conditioned on whether or not Florida law allows the company to pass the costs of the compliance on to its customers.

The settlement is the first to result from seven lawsuits filed last November. The United States also brought actions against American Electric Power, FirstEnergy, Illinois Power, Southern Indiana Gas & Electric Company, Cinergy, and the Southern Company. By filing these unprecedented lawsuits, the United States aims to reduce dramatically the amount of sulfur dioxide, nitrogen oxides, and particulate matter that coal-fired power plants release into the atmosphere.

The lawsuits assert that these power plants have illegally released massive amounts of air pollutants, contributing to some of the most severe environmental problems facing the nation today. For years, the plants have operated without the best available emissions-control technology. This enforcement initiative targeted a total of 17 coal-fired power plants located in Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Mississippi, Ohio, Tennessee, and West Virginia.

The federal settlement decree requires Tampa Electric to:

- Starting in 2003, burn natural gas – a very clean fuel – at the Gannon facility near Tampa, and install appropriate pollution controls for such gas-fired electricity generation.
- Starting in 2008, either install first-class pollution control equipment at Big Bend regardless of the fuel Tampa Electric ultimately decides to use to make electricity at that location.
- Carry out interim pollution control measures at Big Bend while final, permanent controls are selected, designed, and installed; these interim steps include:
 - Starting as soon as possible, improve the use and operation of “scrubbers” so they trap more of the sulphur dioxide released from burning coal before it can escape into the environment;
 - Starting in 2002, install \$3 million worth of “combustion controls” that will begin to reduce the nitrogen oxides created by Big Bend, and
 - Starting in 2001, optimize the operation and maintenance of existing electrostatic precipitators which will keep more particulate matter, which constitutes soot, from reaching the environment.
- Continue to meet stringent emission limits for key pollutants (nitrogen oxides, sulphur dioxide, particulate matter) not only during the life consent decree but also after its termination.
- Starting in 2005, never burn coal at Gannon, and never burn coal at any Big Bend electric generation system that Tampa Electric either shuts down or changes over to natural gas fuel under this settlement.
- Surrender significant amounts of allocation “credits” which otherwise could be used by Tampa Electric or others to emit additional pollution into the air;

- Carry out at least \$5 million worth of BPA-approved projects to demonstrate innovative means for reducing emissions of nitrogen oxides;
- Carry out or finance up to \$2 million in research and pollutant measurement work in the Tampa Bay estuary;
- Pay a civil penalty of \$3.5 million in light of the past violations of law alleged in the complaint filed the Department of Justice on behalf of EPA.

So that Tampa Electric may accomplish these important environmental improvements and continue supplying energy to its customers, the settlement provides significant flexibility for the company. The work called for is phased in over a ten-year period. The settlement also accounts for any emergency conditions that might require extra generation of electricity by the company, and the settlement provides options for how Tampa Electric will meet its environmental obligations if business conditions call for restoring electric generating capacity at Gannon or Big Bend that the company may decide to shut down.

###

SEIZING AN OPPORTUNITY: CUTTING HARMFUL AIR POLLUTION

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This strategy is designed to create the clean energy production that America needs to compete and win in the 21st Century. It is an integrated strategy for four pollutants of concern, rather than looking at each pollutant in isolation. It reinvents air pollution regulation for electric utilities, giving business the flexibility to achieve the most cost-effective reductions and the certainty about environmental requirements to compete in a deregulated marketplace. It gives Americans the clean air they deserve to breathe and makes a down payment on our greatest environmental challenge of the 21st Century – global warming.

COMPREHENSIVE POLLUTION REDUCTION USING MARKET MECHANISMS

Legislation amending the Clean Air Act would be needed to establish a single national standard or emissions cap for four pollutants – nitrogen oxide, sulfur dioxide, carbon dioxide and mercury. The bill also would create an emissions trading program for all pollutants, except mercury. The new standards would lower nitrogen oxide emissions by expanding existing requirements nationally and annually, lower sulfur dioxide emission levels 50% from current federal requirements, lower mercury 50% from 1990 levels, and return carbon emissions to their 1990 levels. All power plants must meet the new requirements by 2008.

IMMEDIATE ACTION PROGRAM

For forward-looking utilities that are prepared to reduce their emissions now, we would use existing Clean Air Act authority to create the regulatory framework to make comprehensive reductions. This approach would replace existing incremental requirements for facilities with new commitments to reduce these pollutants. Such an approach could provide regulatory certainty to the utility industry as it transitions to a deregulated marketplace. This step represents only an interim measure, as all utilities would be unlikely to participate in such a voluntary program.

CREATIVE FINANCING FOR 21st CENTURY CLEAN POWER

The nation must move to 21st Century generation technology. To promote this transition, the federal government would create a new financing mechanism, the Clean Air Bond, to accelerate conversion of older power plants. The federal government would pay the interest on privately issued bonds which would finance the conversion of older facilities to cleaner, highly efficient, technologies that could use a broad mix of fuels. This new creative financing mechanism would be highly leveraged as the government pays only the interest on the bonds, and the private sector raises the principal for the investment.

Christine Anderson / CAC

This settlement is also an important step in our battle against global warming. Nearly 40% of all of our emissions of greenhouse gases. Under this settlement, come from the



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DRAFT

DRAFT

OFFICE OF
THE ADMINISTRATOR

STATEMENT BY CAROL M. BROWNER, EPA ADMINISTRATOR
February 29, 2000

Today we are announcing that a settlement agreement has been reached between the Clinton/Gore Administration and TECO - the Tampa Electric Company. The agreement is the first to take place under EPA's national enforcement action against coal fired-powered plants for violations of the Clean Air Act.

The TECO settlement is a benchmark in the Clinton/Gore Administration's efforts to provide Floridians the greatest possible protection of their public health and their environment.

Today's settlement specifically means significant reductions in the harmful air emissions that cause smog, soot and acid rain.

Today's settlement means that action to reduce air pollution will begin at TECO's two largest facilities by 2001. The company must continue steady reductions on a fixed schedule through 2010.

Today's settlement means that TECO will have to meet tough, truly protective emission standards for the worst pollutants. Hundreds of thousands of tons of harmful pollutants like nitrogen oxides, sulfur dioxide and particulate matter will be removed from the skies over Florida. These pollutants cause serious respiratory disorders and even premature death. They also can damage crops and the environment.

Today's settlement means that TECO will also pay \$3.5 million in civil penalties and another \$10 million for environmentally beneficial projects designed to mitigate the impact of their pollution.

"In other words, it means that TECO will have to clean up quickly, TECO will have to clean up to levels that are truly protective of public health and the environment, and TECO will have to take action to mitigate the pollution it has already caused," Browner concluded.

We are pleased that the company has signed this settlement. And we hope that other utilities follow their example and bring significantly improved air quality to many other areas across America.

-30-30-30-



FEB-29-00 10:53 FROM:OFC OF ADMIN./OCEPA

ID:202 260 3684

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DOJ PUBLIC AFFAIRS

02/28/00 11:27 FAX 202 514 7871



Department of Justice

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**DRAFT**

FOR IMMEDIATE RELEASE
TUESDAY, FEBRUARY 29, 2000
TDD (202) 514-1888

DOJ: (202) 514-2008
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U.S. SETTLES LANDMARK CLEAN AIR ACT CASE AGAINST ELECTRIC UTILITY Agreement Marks a Major Step in National Enforcement Initiative

WASHINGTON – The Justice Department and the Environmental Protection Agency today announced the settlement of a major Clean Air Act enforcement action against the Tampa Electric Company that requires the company to significantly reduce harmful air pollution from its power plants. This agreement is the first to result from a national enforcement action aimed at cutting emissions from coal-fired power plants.

In November 1999, the government charged that Tampa Electric Company and six other utilities violated the law at their power plants by making major modifications to the plants without installing equipment required to control smog, acid rain and soot. The settlement filed today in U.S. District Court in Tampa is unprecedented in its scope, and it marks a major step in the government's ongoing initiative to stop pollution illegally released from coal-fired power plants.

"The Tampa Electric settlement is the first reached under EPA's national enforcement action against coal-fired power plants for violations of the Clean Air Act," said EPA Administrator Carol M. Browner. "The Tampa Electric settlement represents a landmark in the Clinton-Gore administration's efforts to provide the people of Florida with cleaner, healthier air. It ensures the greatest possible protection of public health from air pollution for Floridians and their environment. We are hopeful that other utilities will follow Tampa Electric example, and help bring similar clean-air benefits to many other areas in this country."

"Because of this settlement, the environment will be spared hundreds of thousands of tons of pollution that would have been released from Tampa Electric Gannon and Big Bend power plants," said Lois J. Schiffer, Assistant Attorney General for Environment and Natural Resources. "The company showed a willingness to act quickly to improve quality of the air that Tampa residents breathe. We want other utilities to follow Tampa Electric's lead."

The settlement requires Tampa Electric to pay a \$3.5 million civil penalty. Under the agreement, Tampa Electric will install permanent emissions-control equipment to meet stringent pollution limits; implement a series of interim pollution-reduction measures to reduce emissions while the permanent controls are designed and installed; and retire pollution emission allowances that Tampa Electric or others could use, or sell to others, to emit additional pollution into the environment. The settlement also requires the company to spend between \$10 and \$11 million on environmentally beneficial projects in the region designed to mitigate the impact of emissions from the company's plants.

None of the settlement requirements is conditioned on whether or not Florida law allows the company to pass the costs of the compliance on to its customers.

The settlement is the first to result from seven lawsuits filed last November. The United States also brought actions against American Electric Power, FirstEnergy, Illinois Power, Southern Indiana Gas & Electric Company, Cinergy, and the Southern Company. By filing these unprecedented lawsuits, the United States aims to reduce dramatically the amount of sulfur dioxide, nitrogen oxides, and particulate matter that coal-fired power plants release into the atmosphere.

The lawsuits assert that these power plants have illegally released massive amounts of air pollutants, contributing to some of the most severe environmental problems facing the nation today. For years, the plants have operated without the best available emissions-control technology. This enforcement initiative targeted a total of 17 coal-fired power plants located in Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Mississippi, Ohio, Tennessee, and West Virginia.

The federal settlement decree requires Tampa Electric to:

- Starting in 2003, burn natural gas – a very clean fuel – at the Gannon facility near Tampa, and install appropriate pollution controls for such gas-fired electricity generation.
- Starting in 2008, either install first-class pollution control equipment at Big Bend regardless of the fuel Tampa Electric ultimately decides to use to make electricity at that location.
- Carry out interim pollution control measures at Big Bend while final, permanent controls are selected, designed, and installed; these interim steps include:
 - Starting as soon as possible, improve the use and operation of “scrubbers” so they trap more of the sulphur dioxide released from burning coal before it can escape into the environment.
 - Starting in 2002, install \$3 million worth of “combustion controls” that will begin to reduce the nitrogen oxides created by Big Bend, and
 - Starting in 2001, optimize the operation and maintenance of existing electrostatic precipitators which will keep more particulate matter, which constitutes soot, from reaching the environment.
- Continue to meet stringent emission limits for key pollutants (nitrogen oxides, sulphur dioxide, particulate matter) not only during the life consent decree but also after its termination.
- Starting in 2005, never burn coal at Gannon, and never burn coal at any Big Bend electric generation system that Tampa Electric either shuts down or changes over to natural gas fuel under this settlement.
- Surrender significant amounts of allocation “credits” which otherwise could be used by Tampa Electric or others to emit additional pollution into the air.

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02/29/00 11:28 FAX 202 514 7971

DOJ PUBLIC INFORMATION

- Carry out at least \$5 million worth of EPA-approved projects to demonstrate innovative means for reducing emissions of nitrogen oxides;
- Carry out or finance up to \$2 million in research and pollutant measurement work in the Tampa Bay estuary;
- Pay a civil penalty of \$3.5 million in light of the past violations of law alleged in the complaint filed the Department of Justice on behalf of EPA.

So that Tampa Electric may accomplish these important environmental improvements and continue supplying energy to its customers, the settlement provides significant flexibility for the company. The work called for is phased in over a ten-year period. The settlement also accounts for any emergency conditions that might require extra generation of electricity by the company, and the settlement provides options for how Tampa Electric will meet its environmental obligations if business conditions call for restoring electric generating capacity at Gannon or Big Bend that the company may decide to shut down.

###

Background on utility NSR/enforcement

While the EPA Office of Air and Radiation (Air Office) is drafting a new rule on New Source Review (NSR) reform (see below), the EPA Office of Enforcement and Compliance Assurance (Enforcement) is undertaking a major enforcement effort with utilities on whether NSR rules have been violated. The existing NSR rule is supposed to ensure that when a power plant unit makes changes to upgrade its performance, it is required to install the latest control technology. At issue are the definitions of routine maintenance/changes to existing units and how to determine whether there has been an emission increase caused by the maintenance/changes. Industry believes Enforcement has unofficially adopted new definitions for its investigative purposes to interpret NSR. Eight companies are current targets of this effort. These new definitions are also the subject of contentious and unresolved debate between industry and the Air Office in the rulemaking on NSR reform.

At a meeting between Enforcement and utilities on 22 September, Enforcement announced its plans for settlement required best available control technology (BACT) or lowest achievable emission rate (LAER) for every unit within ten years. Utilities deemed the Enforcement proposal unacceptable and on 8 October, proposed a counter offer to make reductions (not quite as low) between 2017 and 2025. Enforcement rejected the utility proposal and informed the group of utilities that notices of violation (NOVs) would be forthcoming. Negotiations are at an impasse.

After roughly three years of reform efforts and draft rulemakings, the Air Office wants to finalize the current NSR draft by creating an option that would offer companies flexibility (exemption from NSR except new and reconstructed units) in exchange for substantial emissions reductions in a short time frame. This idea was first raised at a July 1998 WH meeting with utility CEOs and Vice President Gore on climate change. At that meeting, the companies highlighted that air quality regulations weren't integrated and presented a barrier to making efficiency improvements (from CHP to smaller projects) to lower the rate of emissions of CO₂ as well as criteria pollutants. The VP directed Bob Perciasepe to work on this issue.

The challenge is to find a way to develop a prospective rule that recognizes these issues and provides a way for companies to make real improvements to public health and the environment and provides a settlement option for the current Enforcement action. The alternative is a huge loss for our side and a future of litigation with long-delayed meaningful emission reductions and failure to promulgate environmental regulations that deliver improvements in a cost-effective manner. This opportunity is also no-risk because if an agreement cannot be negotiated, Enforcement remains unencumbered to pursue its initiative.

Overview of Tampa Electric Proposal

Tampa Electric is one of the eight utilities against which EPA has issued notices of complaint/violation on New Source Review rules. The initial attempts at settlement have not been productive. EPA wants sulfur dioxide (SO₂) and nitrogen oxides (NO_x) controls on every unit (not just ones where violations may have occurred) in the companies' system; the companies countered with a reduction plan that was too far in the future and not low enough. A big concern with EPA's offer is that it would exacerbate carbon dioxide (CO₂) emissions (there is an efficiency penalty with the installation of control technology) and harden companies' resistance on carbon dioxide controls until the control technology investments were paid off. Since early summer, utilities have been discussing with the WH and EPA's Air Office a comprehensive reduction package that would include CO₂ along with SO₂ and NO_x.

On Wednesday, Tampa Electric announced it had entered into a consent decree in the 13th Judicial Circuit Court with Florida's Department of Environmental Protection to substantially reduce emissions. (Using 1997 as a base year, by 2010 SO₂ will decrease by almost 80%, NO_x by 85%, and CO₂ by __% (10+% below 1991.)) The company will move from 98% to 55% coal-fired generation. This is well beyond emissions controls and CO₂ benefits to be had from controls required by New Source Review and represents the type of comprehensive emissions control agreement needed to move forward on air emissions considering both traditional air pollutants and CO₂ (efficiency).

Unfortunately, EPA has reacted quite negatively to this agreement. "It appears that today, Florida officials have settled for far less pollution control than the public has a right to expect under the law. Based on what we have seen, we are alarmed," said EPA Assistant Administrator Steve Herman. Further information from the company to the Task Force confirms these reductions are real (no gaming) and are a stretch for the company. This is the type of agreement the Administration should highlight to advance the creative approaches necessary to resolve air emission issues.

(The deal was negotiated with David Struhs of the Florida DEP; he was formerly with MA Environmental Dept. and responsible for galvanizing northeast states' opposition to midwest power plants.)

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Wednesday, December 8, 1999

ED Volume 27, Number 233

New Mexico Escalates WIPP War With \$1.3 Million Fine

BY GEORGE LOBSENZ

New Mexico regulators, escalating their regulatory showdown with the Energy Department, have fined DOE and one of its contractors \$1.3 million for waste shipments to the Waste Isolation Pilot Plant that allegedly violated the state's hazardous waste disposal law.

The enforcement action is particularly sensitive in that it would appear—if upheld—to directly undermine a court challenge by DOE to New Mexico's final permit for WIPP, which has drawn condemnation from Energy Secre-

(Continued on page 2)

EPA Tramps On Tampa Electric Cleanup Plan To Settle Pollution Suit

BY CHRIS HOLLY

Tampa Electric Co. announced Tuesday it has reached agreement with state regulators on a 10-year, \$1 billion plan to cut air pollution from its coal-fired power plants and will offer the plan as a proposed settlement of an Clean Air Act lawsuit brought against the utility last month by the Environmental Protection Agency and the Justice Department.

In sending EPA the agreement, formalized by a consent judgment entered by the Circuit Court of the Thirteenth Judicial Circuit in Tampa, Tampa Electric becomes the first utility to offer a proposed settlement of EPA's Nov. 3 enforcement action against it and six other companies for alleged clean air violations.

An EPA official, however, in a statement released Tuesday, threw cold water on the proposed settlement, saying federal officials were not included in the negotiations that led to the Florida proposal and that the plan falls far short of what EPA wants in the way of emissions reductions.

"The action filed against Tampa Electric and other utilities by EPA and the Justice Department alleged serious and longstanding violations of the air

(Continued on page 3)

Hebert Comments Rankle Cal-ISO

Price Cap—Of A Sort—To Linger In California

Top officials with the California Independent System Operator revealed

Tuesday they may seek to keep a controversial price cap in place for ancillary services beyond next November, when it is set to expire after being in force for more than two years.

Cal-ISO officials say they do not foresee a "price cap" *per se*. Instead, they are describing what they now plan to propose as a circuit-breaker—akin to the circuit-breakers that can kick in on Wall Street to curb over-exuberant trading.

But whether the Federal Energy Regulatory Commission, which begrudgingly voted to extend the cap by another year until Nov. 15, 2000, will see a difference between a cap and a circuit-breaker remains a very real question.

When FERC agreed to a cap extension in November, it did so by a 3-2 vote and over the strong objections of Commissioners Vicky Bailey and Curt Hebert.

The cap has also met with widespread opposition from various market players who say price caps run counter to a free market. Cal-ISO is one of only two

BY HOWARD BUSKIRK

U.S. power markets where FERC has signed off on temporary caps.

In November, the ISO raised the cap from \$250 per megawatt-hour to \$750 Mwh to limit its effect.

ISO officials also point out that as a result of various market redesigns, the costs of ancillary services now represent only about 5 percent of the state's energy market, compared to 15 percent in 1998.

Terry Winter, president and CEO of Cal-ISO, said his organization will look hard at an appropriate number for a circuit-breaker that might pass muster at FERC.

"Over next year, as we look at the way the market performs during the summer—both the low periods and the high periods—we will be looking at what a reasonable number is that would be high enough to stay out of the operation of the market, but low enough that we don't let people bid infinity when something unique occurs on the system," Winter said.

Asked if FERC would possibly agree to a circuit-breaker, Jan Smutny-Iones, chairman of the Cal-ISO

(Continued on page 4)

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EPA Tramps On Tampa Electric Proposal... (From page one)

pollution law," said EPA Assistant Administrator Steve Herman. "It appears that today, Florida officials have settled for far less air pollution control than the public has a right to expect under the law. Based on what we have seen, we are alarmed."

Herman said EPA is engaged in "active discussions" with the utilities named in the lawsuits to achieve the emissions reductions the enforcement actions called for. He said it is "profoundly disappointing that Florida would fail to consult or even contact the federal officials charged with enforcing these laws and would negotiate such a seriously flawed agreement involving a national enforcement matter. The federal government will continue to vigorously pursue its federal case."

Meanwhile, industry sources said they believe EPA is considering expanding its lawsuit through new enforcement actions aimed at as many as 22 facilities owned by seven additional companies operating in four states.

At the center of the Tampa Electric program is the planned conversion of the 42-year-old, 1,270 megawatt Gannon Station from coal to natural gas. Units 1, 2, and 6 of the Gannon facility will be shut down by the end of 2004, while Units 3, 4, and 5 will be re-powered with new technology and switched to natural gas at a cost of some \$600 million. The redeveloped plant will be renamed Bayside Power Station and by 2004 will provide 1,475 megawatts of electricity.

The plan also calls for maximizing the efficiency of a new sulfur dioxide scrubber serving Units 1 and 2 of the Big Bend Station to target 95 percent SO₂ removal efficiency. The company also seeks to reduce nitrogen oxide emission reductions of 33,400 tons at Big Bend Station units by 2010, with significant reductions coming as early as 2007.

Both Gannon and Big Bend stations were included in a list of 17 power plants named by EPA to be in violation of the Clean Air Act. EPA alleged in the enforcement actions that Tampa Electric and the six other utilities violated the air statute by making changes to the facilities that increased their output without in-

stalling equipment to control the resulting increased emissions.

The \$1 billion project is expected to have a small impact on Tampa Electric customers' monthly bills over the 10-year period, and is subject to Florida Public Service Commission approval. The company will be working with the PSC to develop new programs to further reduce the impact on its 550,000 customers throughout West Central Florida.

Using a variety of proven technologies, Tampa Electric said it expects to reduce sulfur dioxide (SO₂) emissions by almost 80 percent and emissions of nitrogen oxide (NO_x) by more than 85 percent by the year 2010 from 1997 levels.

These reductions are on top of Tampa Electric's efforts with the Environmental Protection Commission of Hillsborough County to develop a voluntary program to lower nitrogen oxide emissions.

This week the company began testing a new SO₂ scrubber at its Big Bend Station Units 1 and 2.

This scrubber will help the company comply with the requirements of Phase II of the Clean Air Act's acid rain program by significantly reducing SO₂ emissions.

Improvements in coal preparation and combustion technology have also been incorporated to achieve compliance with the nitrogen oxide reduction requirements of the air statute.

In addition to the conversion of Gannon Station to high-efficiency combined cycle gas turbines and improving SO₂ and NO_x removal at Big Bend Station, the plan calls for the company to:

- Undertake a study of improved particulate removal and monitoring at Big Bend Station and make improvements based on results.
- Invest up to \$8 million for developing innovative technologies for reducing NO_x emissions.
- Cooperate with DEP on its Bay Regional Air Chemistry Experiment program that studies nitrogen deposition in Tampa Bay, including contributing up to \$2 million to fund the research.

El Paso Buying Dynegy's California Cogen Assets

Dynegy Corp. will sell its interest in 11 cogeneration plants in California with 370 megawatts of capacity to a subsidiary of El Paso Energy Corp. for \$255 million, the companies announced Tuesday.

Dynegy said it is selling the plants as part of its effort to close its pending acquisition of Illinova Corp., the Illinois utility. The company said it needed to sell or restructure its interest in the plants because they are "qualifying facilities" under the Public Utility Regulatory Policies Act (PURPA).

"In order to meet PURPA ownership requirements after the completion of our proposed merger with Illinova Corp., we are required to seek strategic alternatives for our QF facilities," explained Steve Bergstrom, president and chief operating officer of Dynegy. "Our agreement with El Paso represents yet another major milestone in the merger process, clearing the way for its completion early during the first quarter of 2000."

Dynegy still must find a buyer or restructure its interest in two QFs—the 610 MW Cogen Lyondell plant in Houston and a 5 MW facility in Port Arthur, Texas.

Meanwhile El Paso sees the plants as part of a strategy of owning more merchant generation, especially in the fast-growing California market.

"These assets fit our strategy of acquiring well-run generating assets with long-term power purchase agreements," said Greg Jenkins, president of El Paso Merchant Energy Company. "We look forward to increasing our participation in the California energy market and capitalizing on the inherent value embedded in these assets."

The companies hope to close the deal in early January, subject to federal regulatory approval and the consent of various lenders and third parties.

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- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

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- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

Thurs Feb 3 4pm - PODESTA mtg

facsimile

Date: FEB 2. 2000

To: ANGIE

456.1736

SCOTT HYNES

6-1907

NANCY

6-2710

From: Roxanne Willis
Green Group Coordinator
1200 New York Avenue, NW
Suite 400
Washington, DC 20005
202.289.2384 (phone)
202.289.1060 (fax)

Pages (Including Cover Sheet): 1

Notes:

GREEN GROUP MEETING WITH THE CHIEF OF STAFF

Please clear the following people in to the meeting at 4:00 on Thursday, February 3rd:

Phil Clapp, President, National Environmental Trust
Paul Hansen, Executive Director, Izaak Walton League
Gene Karpinski, Executive Director, US PIRG
David Hawkins, Director, Air & Energy Programs, NRDC
Alden Meyer, Director of Government Relations, UCS
Roxanne Willis, Green Group Coordinator



Please call the following people at the following numbers:

Howard Ris, Executive Director, Union of Concerned Scientists	(617) 547-5552
Fred Krupp, Executive Director, Environmental Defense	(212) 616-1234
Carl Pope, Executive Director, Sierra Club	(415) 977-5669

PODESTA TALKING POINTS/AGENDA

Meeting with Enviro CEOs

February 3, 2000

- Thank you; sorry I couldn't meet with you earlier (they wrote you asking for a meeting to discuss power plants a few weeks ago; George and I did it for you).
- George and Roger conveyed to me the concern you expressed at that meeting about the power sector – the greatest domestic source of greenhouse gas emissions.
- Today, I would like to:
 - **1. Hear your views on power plants;**
 - **2. Tell you our thinking** (ground rules re: press?)
 - Controversial within Admin;
 - Must not interfere with EPA enforcement;
 - No realistic view to pass this year;
 - Like integrated, multi-pollutant approach, including carbon;
 - Want to use market mechanisms and give industry new flexibility;
 - Would like some industry validators, but *need* clear enviro support (not family fights over details).
 - **3. Talk about where we go from here.**
- I would also like to discuss **Earth Day** as it pertains to this issue and otherwise.

Memo

To: Interested Senate Staff
From: David Hawkins ~~DA~~
Date: 1/28/2000
Re: Briefing on NSR Enforcement

As a follow-up to the briefing on Clean Air Act New Source Review enforcement issues that a number of you attended on January 27, I thought it might be helpful to summarize the major points I discussed. Please call (202-289-6868) or email (dhawkins@nrdc.org) if you would like additional information.

NSR Enforcement background and issues:

Congress made a deliberate decision in 1970 to subject modifications of stationary sources as well as new sources to new source performance requirements. This contrasts with the policy choice Congress made for automobiles, where new cars must meet "new source" standards but modifications are not covered. There is a good reason for the different approaches: Congress in 1970 had solid information that the car fleet would turn over and that has been borne out (emissions from 20-year-old cars are a very small part of total vehicle pollution). For stationary sources there were predictions of retirements but not a lot of historic information. To be sure that we would not have to wait forever for a stationary source "fleet turnover," Congress specified that modifications of these sources would have to meet new source standards as well. Moreover, Congress drafted the "modification" definition very broadly, to give EPA maximum authority to prevent sources from evading new performance standards with piecemeal changes.

EPA wrote a regulatory exemption for routine maintenance but the challenged projects cannot be called routine maintenance, either as a matter of law, logic, history, or good policy. The handouts document an industry capital investment strategy, starting in the 1980s, to spend money to keep existing plants running longer and harder rather than letting them retire and be replaced by new capacity. This has had the effect causing old, grandfathered plants to dominate our air pollution problems (e.g., 84% of current utility NOx emissions come from plants built more than 20 years ago). In essence, the industry decided to sell more electricity by building new capacity into their existing machines. This practice has both kept pollution at unreasonable high levels and has functioned as a barrier to entry into the market—keeping many new clean, efficient units from being built.

While the industry is now labeling these projects as "routine maintenance," utility equipment vendors as well as utility witnesses in PUC Rate Cases have described these projects as going beyond maintenance and providing capacity that otherwise would have to be created by building new units. (See attached B&W and ABB papers and Ohio Power testimony before PUCO. See also AEP's recent

filing with DOE where it claims greenhouse gas reduction credits under EPCA sec. 1605B for projects it states do not include "routine maintenance" activities. Note that while AEP claims these projects reduced greenhouse gases, in fact emissions of greenhouse and other pollutants increased at the plants where these projects occurred. Had the NSR rules been complied with, the extra generation from these plants would have been produced with much lower pollution meeting NSR standards.)

Now, as in the late 1980s, industry argues that if they are not increasing capacity beyond a plant's original maximum design capacity, that all their upgrade investments should be exempt as routine maintenance. But the 7th Circuit in 1990 rejected this claim, pointing out that this interpretation would confer indefinite immunity from new source standards, contrary to Congress' intent.

EPA has not changed the rules. In the Reagan Administration EPA got wind of the emerging practice of refurbishing old plants and issued its WEPCO ruling to put the industry on notice that a broad definition of routine maintenance was unlawful. EPA's position, then as now, was that projects that increased a unit's ability (technically or economically) to generate electricity above the capacity that existed before the project was carried out, could not be classed as routine maintenance. When the court upheld EPA in 1990, the industry lobbied in Congress for broad exemptions from NSR for utility modification projects. When they did not get additional statutory exemptions, they lobbied the Bush Administration for regulatory exemptions. In 1992, the Bush Administration amended the NSR rules to give the utility industry a more generous formula for calculating whether an emission increase had occurred. But the rule did not change the definition of routine maintenance. After the 1992 rule had been in place for a few years, EPA began an investigation of industry practices to determine why so few NSR applications had been filed. The industry sought intervention by OMB, using the Paperwork Reduction Act as a pretext. While this effort delayed EPA's investigation for a time, OMB ultimately rejected the industry's paperwork claims.

The industry complains that EPA has not published a detailed reference book listing exactly which projects are "routine maintenance" and which are not. But EPA has explained in numerous communications with utilities and other industries, that determining the correct classification of many projects is a highly fact-specific undertaking. For that reason, it has been EPA's practice for 30 years to issue "applicability determination" letters to resolve questions about whether a specific project would trigger NSR. These letters are similar to the opinion letters that the IRS uses to answer fact-dependent tax questions.

Industry implies that EPA has not given them fair notice of their NSR obligations. The opposite is true. Industry was well aware from the outset that these types of projects could trigger NSR. Minutes of a 1984 industry discussion contain recommendations that companies should –

- identify the projects as "upgraded maintenance programs;"
- "downplay the life extension aspects of these projects (and extended retirement dates) by referring to them as plant restoration (reliability/availability improvement) projects;"
- deal with the air regulatory issues "at the state and local level and not elevate [them] to the status of a national environmental issue." (ie, don't ask EPA because you won't like the answer)

(See 1984 EPRI Proceedings of Fossil Plant Life Extension Conference at 27-4). See also items 9 and 10 for examples of how this script has been followed.

Finally, there is no merit to claims that companies today cannot make needed repairs for fear of triggering an enforcement action. EPA's 1992 rules for utilities contain generous formulas that set "baseline" emissions at the maximum polluting hour in the past five years and the average of the two

maximum polluting years of the previous five years. A company that commits to not exceed these generous limits can carry out any modification or maintenance project it wishes, routine or otherwise, without triggering NSR. Companies who refuse to commit to limit their pollution increases can seek applicability determinations from EPA.

Here is a brief description of the attached handouts:

1. Q&A sheet on the basic NSR issues and claims.
2. Summary of the violations alleged in EPA's complaints and notices. (Note, as an example, the replacement of 700 HP fans with 900 HP fans: the equivalent of replacing your car's 350 HP oem engine with a 450HP performance engine; hardly routine maintenance).
3. EPRI Journal articles on Life Extension, 1983 and 1987.
4. EPRI Proceeding of 1984 Fossil Plant Life Extension Conference.
5. Excerpt from Steam, B&W reference text on powerplants (describes origin of life extension strategy).
6. Excerpt from Combustion, ABB reference text (describes distinction between normal maintenance and "life continuation" projects).
7. Chart of Sporn plant NOx emissions from 1990-1998, showing large NOx increases following projects that enforcement suits challenge.
8. Letter from EPA to AEP providing additional charts of Sporn plant coal use, generation and emissions increases.
9. B&W brochure on "capacity restoration" projects at AEP Cardinal and Muskingum River plants.
10. AEP/B&W paper on Clinch River plant "capacity restoration" project.
11. Ohio Power testimony before Public Utilities Commission of Ohio ("The life optimization programs extend over several years, and require significant capital expenditures during those years. Without those expenditures, the units' lives could not be extended, and they would most likely achieve more traditional lifetimes, on the order of 35-40 years.")
12. AEP Greenhouse Gas Report to DOE under EPCA sec. 1605B for "heat rate improvement" projects at Amos, Big Sandy, Cardinal, Clinch River, Conesville, Glen Lyn, Gavin, Kammer, Kanawha River, Mitchell, Muskingum River, Mountaineer, Picway, Rockport, Sporn, and Tanners Creek plants. ("Routine maintenance and other activities that only restore heat rate back to original values are not included.")

New Source Review Q's and A's

1. What are the basic statutory and regulatory requirements?

In 1970 Congress required new and modified pollution sources to meet new source performance standards. The statutory definition of modification is extremely broad: "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source...." (sec. 111(a)(4)).

EPA's regulation's established several categorical exemptions from the broad statutory definition, among them an exclusion for "routine maintenance, repair or replacement."

2. Are the challenged projects exempt as "routine maintenance"?

No. The projects that are challenged involvement major capital projects to replace outmoded or deteriorated equipment with upgraded or redesigned components in order to enable increases in generation from the units.

The nature, scope, cost, and effects of these projects are fully within the types of changes that the 7th Circuit in the 1990 "WEPCO" case ruled EPA correctly determined were not "routine maintenance, repair or replacement."

Industry literature and filings with public utility commissions also distinguish these projects from normal or routine maintenance. They seek additional returns from ratepayers for these projects using the argument that absent these projects the units' operating lives would be shorter and new capacity would be needed. (See, e.g., attached Ohio Power testimony.)

See also attached AEP report to DOE stating that its heat rate improvement projects do not include "routine maintenance."

The strategy of upgrading old plants to keep them operating more was outlined in industry literature in the 1980's (see attached EPRI, B&W, and CE articles) but documenting specific projects and tracking resulting emission increases has taken a significant investigatory effort.

The effect of these projects has been to keep newer cleaner units out of the marketplace so that older plants continue to dominate generation and emissions. Over 84% of US utility NOx emissions come from plants built more than 20 years ago. Contrast that with passenger cars, where 20-year-old vehicles comprise only a minor part of the vehicle pollution inventory.

3. Has EPA changed the NSR ground-rules?

No. EPA has consistently construed the "routine maintenance" exemption as a narrow one. In 1988, the Reagan EPA brought a test case to seek judicial ratification

of its position that "routine maintenance" must be narrowly construed to achieve Congress' purpose of reducing emissions through NSPS and PSD as existing sources retire. In 1990 the 7th Circuit agreed, stating that the industry's claim for a broad exemption "would open vistas of indefinite immunity from the provisions of NSPS and PSD." WEPCO v. Reilly, 893 F. 2d 901, 908. The agency's position in WEPCO was the same as it is now: projects that increase a deteriorated unit's ability to produce electricity from the conditions that existed prior to the change cannot be classified as "routine."

EPA's guidance explicitly directs companies with projects that may increase actual emissions to consult with permitting authorities to review any claims that the project might be routine maintenance. But electric companies have carried out their projects without seeking such review.

4. Can these plants take necessary safety and reliability maintenance actions without triggering NSR?

Yes. EPA's rules for electric utility plants contain overly generous baselines for exempting projects from NSR and PSD even if they are not routine maintenance. A company can carry out any projects short of full unit reconstruction simply by committing to limit its future emissions so that a large actual emission increase does not occur. The baseline for measuring an emissions increase under EPA's rules is the maximum hourly emissions achieved in the five years preceding the project and the average of the two and the average of the two maximum annual emission levels in the preceding 5 years.

EPA NSR Enforcement Action Summary (As of January 28, 2000)

Company	Plant	Unit	Targeted Projects Identified in NOV's, Complaints	Date	Iden in Cmplnt	Alleged Violation
AEP	Muskingum	1	Replacement of primary air fans	1981		PSD
AEP	Muskingum	1	Replacement of primary roof tubing	1988-90	X	PSD
AEP	Muskingum	1	Replacement of entire inlet and outlet tube assemblies for the secondary superheaters	1988	X	PSD
AEP	Muskingum	2	Replacement of primary air fans	1981		PSD
AEP	Muskingum	2	Replacement of entire inlet and outlet tube assemblies for the secondary superheaters	1988	X	PSD
AEP	Muskingum	2	Replacement of primary roof tubing	1988-90	X	PSD
AEP	Muskingum	2	Installation of high pressure turbine inner shell and nozzle for HP turbine	1991		PSD
AEP	Muskingum	3	Replacement of secondary superheater outlet, reheat inlet, intermediate, and outlet platens and installation of complete re-entrant throat tube assemblies, casing, and	1980-81	X	PSD & NSPS
AEP	Muskingum	3	Replacement of furnace floor tubing	1985		PSD
AEP	Muskingum	3	Replacement and design upgrade of 5 cyclone furnaces, primary burners, and related equipment	1987-89	X	PSD
AEP	Muskingum	3	Replacement of secondary superheater outlet headers and legs	1989-90		PSD
AEP	Muskingum	3	Replacement of furnace rear wall, rear arch, side walls and headers	1997		PSD
AEP	Muskingum	4	Replacement of secondary superheater outlet, reheat inlet, intermediate, and outlet platens and installation of complete re-entrant throat tube assemblies, casing, and cyclone attachments	1980-81	X	PSD
AEP	Muskingum	4	Replacement and design upgrade of 5 cyclone furnaces, primary burners, and related equipment	1987-89	X	PSD
AEP	Muskingum	4	Replacement of furnace floor tubing	1989		PSD
AEP	Muskingum	4	Replacement of furnace rear wall, rear arch, side walls and headers	1997		PSD
AEP	Muskingum	5	Replacement and redesign of five pulverizers and addition of ten burners constructed on the front and rear walls of primary furnace	1979-80	X	PSD & NSPS
AEP	Muskingum	5	Removal of horizontal primary superheater, addition of redesigned horizontal reheater and wingwalls	1980-81	X	PSD & NSPS
AEP	Muskingum	5	Replacement of furnace hopper slope complete with structural members	1980		PSD
AEP	Muskingum	5	Replacement and redesign of upgraded economizer	1985	X	PSD
AEP	Muskingum	5	Replacement of five 700 HP primary air fan motors with 900 HP primary air fan motors	1988	X	PSD
AEP	Muskingum	5	Replacement of high pressure feedwater heaters	1989	X	PSD
AEP	Muskingum	5	Replacement of first superheater outlet bank and installation of lower furnace tubes	1992	X	PSD
AEP	Cardinal	1	Replacement and redesign of five pulverizers and addition of ten burners constructed on the front and rear walls of primary furnace	1980-81	X	PSD & NSPS
AEP	Cardinal	1	Replacement and redesign of economizer and casing	1989	X	PSD
AEP	Cardinal	1	Removal of horizontal primary superheater, addition of redesigned horizontal reheater and wingwalls	1981-82	X	PSD & NSPS
AEP	Cardinal	1	Replacement of five 700 HP primary air fan motors with 900 HP primary air fan motors	1987	X	NSPS

EPA NSR Enforcement Action Summary (As of January 28, 2000)

Company	Plant	Unit	Targeted Projects Identified in NOV's, Complaints	Date	Iden in Cmplnt	Alleged Violation
AEP	Cardinal	1	Replacement of hot and cold air heater baskets and high pressure feed-water heaters	1990		PSD
AEP	Cardinal	1	Replacement of lower furnace tubing	1992	X	PSD
AEP	Cardinal	1	Replacement of main condenser tubes	1992	X	PSD
AEP	Cardinal	1	Replacement of high pressure feedwater heaters	1994		PSD
AEP	Cardinal	2	Replacement and redesign of five pulverizers and addition of ten burners constructed on the front and rear walls of primary furnace	1979-80	X	PSD & NSPS
AEP	Cardinal	2	Removal of horizontal primary superheater, addition of redesigned horizontal reheater and wingwalls	1980-81	X	PSD & NSPS
AEP	Cardinal	2	Replacement of five 700 HP primary air fan motors with	1987	X	NSPS
AEP	Cardinal	2	Replacement and redesign of economizer and casing	1989	X	PSD
AEP	Cardinal	2	Replacement of hot and cold air heater baskets and high pressure feed-water heaters	1989		PSD
AEP	Cardinal	2	Replacement of main condenser tubes	1992	X	PSD
AEP	Cardinal	2	Replacement of lower furnace tubing	1993	X	PSD
AEP	Cardinal	2	Replacement of high pressure feedwater heaters	1994	X	PSD
AEP	Cardinal	3	Installation of rotating blades	1987		PSD
AEP	Cardinal	3	Replacement of hot and cold air heater baskets	1989		PSD
AEP	Cardinal	3	Installation of new design casing in high pressure turbine inner shell	1992		PSD
AEP	Cardinal	3	Replacement of lower main condenser tubes	1993		PSD
AEP	Cardinal	3	Installation of new ID fan motors	1998		PSD
AEP	Conesville	1	Replacement of four cyclones, primary burners, and re-entrant throats	1987		PSD
AEP	Conesville	1	Replacement of furnace floor tubing	1990		PSD
AEP	Conesville	1	Installation of new high pressure/intermediate pressure turbine rotor and turbine seals	1990		PSD
AEP	Conesville	2	Replacement of four cyclones, primary burners, and re-entrant throats	1987		PSD
AEP	Conesville	2	Replacement of furnace floor tubing	1989		PSD
AEP	Conesville	3	Replacement of economizer bank	1988		PSD
AEP	Conesville	3	Replacement of secondary superheater outlet head	1993		PSD
AEP	Tanners Creek	2	Replacement of eleven cyclone furnaces	1987	X	PSD
AEP	Tanners Creek	2	Replacement of reheater outlet bank and headers	1992		PSD
AEP	Tanners Creek	3	Replacement of outlet bank and outlet headers for reheater, primary superheater outlet banks, outlet headers, and vestibule casing	1988	X	PSD
AEP	Tanners Creek	3	Replacement of reheater inlet and intermediate banks	1993		PSD
AEP	Tanners Creek	4	Replacement of furnace arch and floor tubes	1989	X	PSD
AEP	Tanners Creek	4	Replacement of tubular air heater	1992	X	PSD
AEP	Tanners Creek	4	Replacement of high pressure feedwater heaters	1994		PSD
AEP	Tanners Creek	4	Replacement of primary furnace floor and side wall tubes	1995	X	PSD
AEP	Sporn	1	Replacement of lower waterwall headers in rear and side walls	1990	X	PSD
AEP	Sporn	1	Replacement of all main condenser tubes	1990-91	X	PSD
AEP	Sporn	2	Replacement of rear and side wall lower furnace headers and sealing of the skirt and trough	1990-91	X	PSD
AEP	Sporn	2	Replacement of all main condenser tubes	1990-91	X	PSD

EPA NSR Enforcement Action Summary (As of January 28, 2000)

Company	Plant	Unit	Targeted Projects Identified in NOV's, Complaints	Date	Iden in Cmplnt	Alleged Violation
AEP	Sporn	3	Replacement of rear and side wall lower furnace headers and sealing of the skirt and trough	1990-91	X	PSD
AEP	Sporn	4	Replacement of primary, reheat and superheater outlet banks and outlet headers	1990	X	PSD
AEP	Sporn	4	Replacement of rear and side wall lower furnace headers and sealing of the skirt and trough	1990-91	X	PSD
AEP	Sporn	4	Replacement of all main condenser tubes	1990-91	X	PSD
AEP	Sporn	5	Replacement of upper three banks of first reheater and first reheater inlet header	1990		PSD
AEP	Sporn	5	Replacement of low pressure, high pressure and auxillary condenser tubes	1992		PSD
AEP	Sporn	5	Replacement of all lower furnace turbes and related components	1993	X	PSD
AEP	Sporn	5	Replacement of main steam stop valves	1994		PSD
AEP	Mitchell	1	Redesign of economizer by installation of additional economizer surfaces	1987-88	X	PSD
AEP	Mitchell	1	Replacement of all main condenser tubes	1989	X	PSD
AEP	Mitchell	1	Conversion and redesign of No. 15 MBF pulverizer to an MPS-89 pulverizer	1990-91	X	PSD
AEP	Mitchell	1	Replacement of low pressure reheat outlet bank	1992-93	X	PSD
AEP	Mitchell	1	Replacement of all front tube screens	1997	X	PSD
AEP	Mitchell	2	Redesign of economizer by installation of additional economizer surfaces	1987-88	X	PSD
AEP	Mitchell	2	Replacement of all main condenser tubes	1989	X	PSD
AEP	Mitchell	2	Replacement of lower pressure reheat outlet bank	1992-93	X	PSD
Cinergy	Cayuga	1	Replacement of economizer upper sections	1985	X	PSD & NSPS
Cinergy	Cayuga	1	Replacement of forced draft fans	1988	X	PSD
Cinergy	Cayuga	1	Replacement of boiler reheater front pendants	1995	X	PSD
Cinergy	Cayuga	1	Replacement of boiler lower slope tubes	1996	X	PSD
Cinergy	Cayuga	2	Replacement of economizer upper sections	1984	X	PSD & NSPS
Cinergy	Cayuga	2	Replacement of forced draft fans	1990	X	PSD
Cinergy	Cayuga	2	Replacement of boiler reheater front pendants	1994	X	PSD
Cinergy	Wabash River	1	Replacement of radiant superheater tubes, intermediate and finishing superheater sections, upper reheater	1989		PSD
Cinergy	Wabash River	1	Replacement of high pressure heater (no NOV but alleged in complaint)	1995	X	PSD
Cinergy	Wabash River	2	Replacement of radiant superheater tubes	1989		PSD
Cinergy	Wabash River	2	Replacement of high temperature/finishing superheater assemblies upper reheater assemblies	1992		PSD
Cinergy	Wabash River	2	Replacement of reheater and superheater outlet sections	1997		PSD
Cinergy	Wabash River	3	Replacement of finishing superheater, intermediate superheater, radiant superheater, upper reheater and missing lower reheater tube bundles	1989		PSD
Cinergy	Wabash River	4	Replacement of superheater radiant front wall	1991		PSD
Cinergy	Wabash River	4	Replacement of finishing superheater tubes	1995		PSD
Cinergy	Wabash River	4	Replacement of outlet reheater tube assemblies	1996		PSD

EPA NSR Enforcement Action Summary (As of January 28, 2000)

Company	Plant	Unit	Targeted Projects Identified in NOV's, Complaints	Date	Iden in Cmplnt	Alleged Violation
Cinergy	Wabash River	5	Replacement of upper economizer boiler tube hangers, hanger rods, repair of boiler structural work, realignment of steam headers	1990		PSD
Cinergy	Wabash River	6	Replacement of feedwater heaters	1987		PSD
Cinergy	Wabash River	6	Replacement of induced draft fan wheels	1989		PSD
Cinergy	Wabash River	6	Replacement of bottom ash hopper	1994		PSD
Cinergy	Gallagher	1	Replacement of radiant superheater tubes	1992		PSD
Cinergy	Gallagher	1	Replacement of high temperature superheater section	1994		PSD
Cinergy	Gallagher	2	Replacement of high temperature superheater outer pendant sections	1986		PSD
Cinergy	Gallagher	2	Replacement of condenser tubes	1990		PSD
Cinergy	Gallagher	2	Replacement of radiant superheater tubes	1992		PSD
Cinergy	Gallagher	3	Replacement of high temperature superheater outer pendant sections	1987		PSD
Cinergy	Gallagher	4	Replacement of high temperature superheater outer pendant sections	1986		PSD
Cinergy	Beckjord	1	Replacement of high temperature superheater outer pendant sections	1987-88		PSD
Cinergy	Beckjord	2	Replacement of furnace wall tubes, superheater, reheater header and coal bunker	1987		PSD
Cinergy	Beckjord	3	Replacement of superheater, reheater, boiler tubing and coal bunker	1985	X	PSD
Cinergy	Beckjord	4	Replacement of waterwall tubing and superheater	1989	X	PSD
Cinergy	Beckjord	5	Replacement of economizer, high temperature reheater and condenser tubing	1989-91	X	PSD
Cinergy	Beckjord	6	Replacement of condenser	1994-95		PSD
Cinergy	Beckjord	6	Replacement of feedwater heaters			PSD
FirstEnergy	WH Sammis	1	Replacement of reheater, furnace ash hopper, boiler tubes and secondary superheater outlet header	1993	X	PSD
FirstEnergy	WH Sammis	2	Replacement of reheater, furnace ash hopper, boiler tubes and secondary superheater outlet header	1991	X	PSD
FirstEnergy	WH Sammis	3	Replacement of reheater, furnace ash hopper, boiler tubes and secondary superheater outlet header, front wall south cell boiler tubes, radiant downflow tubes and furnace sidewall tubes	1992	X	PSD
FirstEnergy	WH Sammis	4	Replacement of reheater, furnace ash hopper, boiler tubes, waterwall tubes, superheater third pass outlet header and superheater control condenser tubes	1990		PSD
FirstEnergy	WH Sammis	5	Replacement of vertical tube furnace with spiral tube furnace	1984	X	PSD
FirstEnergy	WH Sammis	5	Replacement of economizer, secondary superheater outlet pendant and reheater outlet bank	1990	X	PSD
FirstEnergy	WH Sammis	6	Replacement of horizontal reheater and economizer	1987	X	PSD
FirstEnergy	WH Sammis	6	Replacement of burners, front and rear waterwall tubes, reheater riser and pendant tubes, first through third pass mix area walls and coal pulverizer piping	1992	X	PSD & NSPS
FirstEnergy	WH Sammis	6	Replacement of first and second furnace waterwalls	1994	X	PSD & NSPS
FirstEnergy	WH Sammis	6	Replacement of coal pulverizers	1998	X	PSD

EPA NSR Enforcement Action Summary (As of January 28, 2000)

Company	Plant	Unit	Targeted Projects Identified in NOV's, Complaints	Date	Iden in Cmplnt	Alleged Violation
FirstEnergy	WH Sammis	7	Replacement of economizer, horizontal reheater, reheater riser tubes, turbine rotors and front ash hopper tubes	1989	X	PSD
FirstEnergy	WH Sammis	7	Replacement of waterwall panels	1991	X	PSD
FirstEnergy	WH Sammis	7	Replacement of first and second furnace waterwalls	1993		PSD
FirstEnergy	WH Sammis	7	Replacement of first and second pass furnace waterwalls and front third pass waterwall tubes	1994		PSD
Illinois Power	Baldwin	1	Replacement of cold end air heater tubes	1985	X	PSD
Illinois Power	Baldwin	1	Replacement of fourteen cyclones, front and rear furnace walls	1992	X	PSD
Illinois Power	Baldwin	2	Replacement of cold end air heater tubes	1988, 1991	X	PSD
Illinois Power	Baldwin	2	Replacement of boiler floor	1991	X	PSD
Illinois Power	Baldwin	3	Replacement of economizer	1982	X	PSD
Illinois Power	Baldwin	3	Replacement of secondary superheater surface	1993-94	X	PSD
Illinois Power	Baldwin	3	Replacement of reheater	1994	X	PSD
SIGECO	Culley	1	Replacement of economizer	1991	X	PSD
SIGECO	Culley	2	Replacement of outlet section of secondary superheater	1992	X	PSD
SIGECO	Culley	3	Replacement of feedwater heater	1991		PSD
SIGECO	Culley	3	Replacement of economizer bank	1994	X	PSD
Southern	Scherer	3	Commenced construction without PSD permit, not in compliance with NSPS subpart D	1979-87	X	PSD & NSPS
Southern	Scherer	4	Commenced construction without PSD permit, not in compliance with NSPS subpart D	1979-89	X	PSD & NSPS
Southern	Bowen	2	Replacement and redesign of economizer	1992	X	PSD
Southern	Miller	3	Commenced construction without PSD permit, not in compliance with NSPS subpart D	1979-89	X	PSD & NSPS
Southern	Miller	4	Commenced construction without PSD permit, not in compliance with NSPS subpart D	1979-91	X	PSD & NSPS
Southern	Barry	5	Installation of new economizer	1993	X	PSD
Southern	Gorgas	10	Balanced draft conversion	1985	X	PSD
Southern	Gorgas	10	Installation of new economizer	1994	X	PSD
Southern	Gorgas	10	Installation of redesigned air heaters	1994	X	PSD
Southern	Gaston	5	Replacement of front reheater	1991		PSD
Southern	Greene City	2	Replacement of primary reheater	1989		PSD
Southern	Watson	5	Replacement of economizer	1992		PSD
Southern	Crist	7	Replacement of economizer	1996		PSD
Southern	Kraft	3	Balanced draft conversion	1985		PSD
Tampa Electric	Big Bend	1	Replacement of steam drum internals	1994	X	PSD
Tampa Electric	Big Bend	2	Replacement of steam drum internals	1991	X	PSD
Tampa Electric	Big Bend	2	Replacement of high temperature reheater and waterwall addition	1994	X	PSD
Tampa Electric	Gannon	3	Replacement of furnace floor	1996	X	PSD
Tampa Electric	Gannon	4	Replacement of cyclone burners	1994	X	PSD
Tampa Electric	Gannon	6	Replacement of second radiant superheater	1992		PSD
TVA	Paradise	1	Replacement of cyclones, lower furnace walls, including headers and floor	1985		PSD
TVA	Paradise	2	Replacement of cyclones, lower furnace walls, including headers and floor	1985		PSD

EPA NSR Enforcement Action Summary (As of January 28, 2000)

Company	Plant	Unit	Targeted Projects Identified in NOVs, Complaints	Date	Iden in Cmplnt	Alleged Violation
TVA	Paradise	3	Replacement of cyclones, lower furnace walls, including headers and floor	1985		PSD
TVA	Paradise	3	Operation of unit in violation of NSPS subpart Da after 1985 replacement of cyclones and lower furnace wall	1985		PSD & NSPS
TVA	Colbert	5	Rehabilitation and modification of boiler, turbine and controls	1982		PSD
TVA	Colbert	5	Operation of unit in violation of NSPS subpart Da after rehabilitation and modification of boiler, turbine and controls	1982		PSD & NSPS
TVA	Widows Creek	5	Replacement of reheater and secondary superheater crossovers and elements	1989		PSD
TVA	Allen	3	Replacement of reheater with redesigned reheater	1991-92		PSD
TVA	John Sevier	3	Replacement of all waterwall tubes in front, rear and sidewalls of both furnaces	1988		PSD
TVA	John Sevier	3	Replacement of all burner tube panels in both furnaces	1988		PSD
TVA	John Sevier	3	Replacement of superheater platen elements	1988		PSD
TVA	Cumberland	1	Replacement and redesign of front and rear secondary superheater outlet headers	1993		PSD
TVA	Cumberland	1	Replacement of inlet terminal tubes and main steam piping	1993		PSD
TVA	Cumberland	2	Replacement and redesign of front and rear secondary superheater outlet headers	1993		PSD
TVA	Cumberland	2	Replacement of inlet terminal tubes and main steam piping	1993		PSD
TVA	Bull Run	1	Replacement of secondary superheater outlet pendant elements and all economizer elements in "A" and "B" furnaces	1987		PSD

Extending the Lifespan of Fossil Plants

A Reprint
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ELECTRIC POWER RESEARCH INSTITUTE

EPRI JOURNAL

Forty years of age is usually retirement time for power plants.

Boilers, turbines, generators, condensers, fans, and other components are nearing the end of their design lives, and efficiency, reliability, and availability are on a steady downward swing. As the plants become less and less economical, they are taken off-line, and newer units replace them.

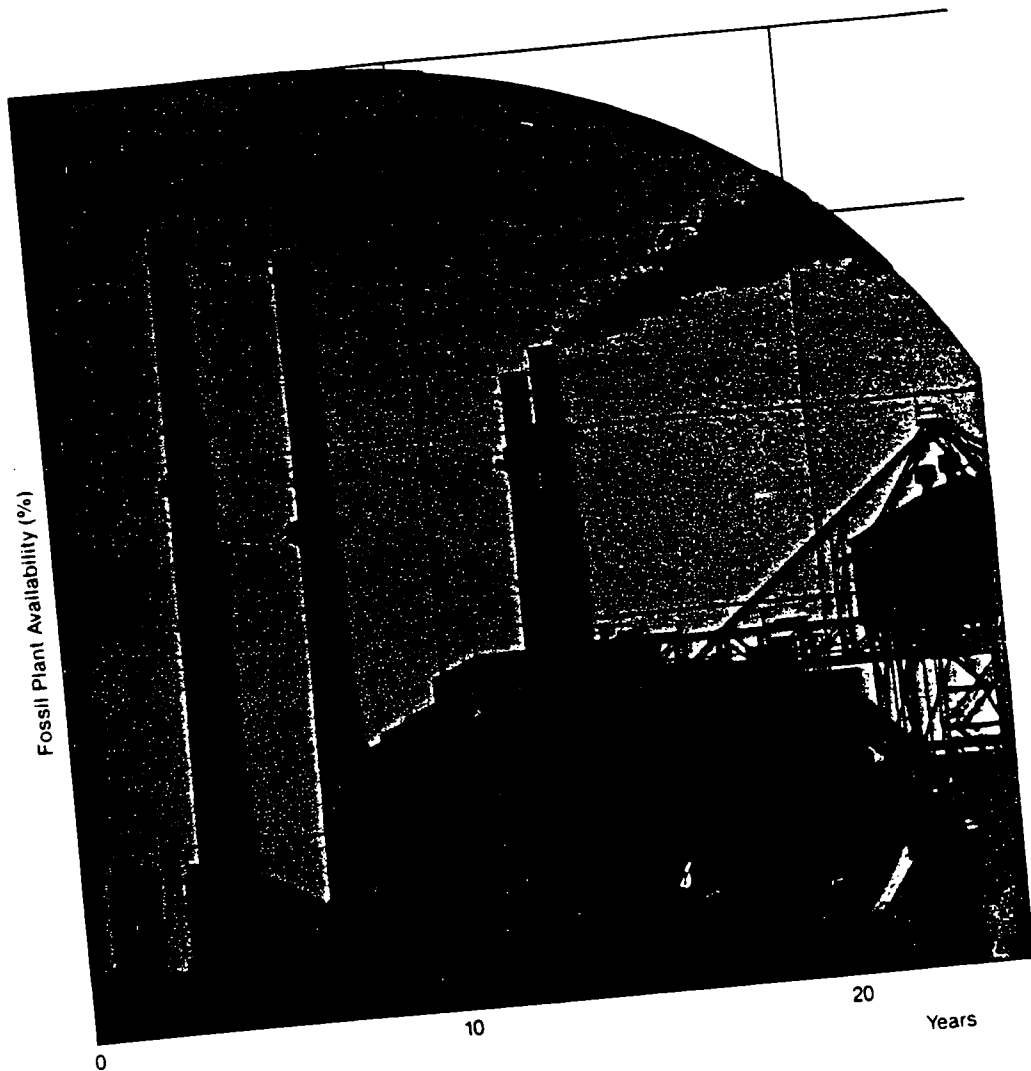
Fewer new units

But electric utilities are not building many new units these days. Because of increasing capital costs and interest rates, new plants cost about \$1200–\$1500/kW

to construct, compared with the modest \$100–\$200/kW price that utilities paid 20–30 years ago. With load growth almost at a standstill, revenues are down and few utilities can meet this asking price. Even utilities that can afford new plants are finding it harder to build them because environmental and land-use permits can take years to obtain. As new plants become less of an option, utilities are increasingly interested in keeping their old fossil plants around to meet electricity demand. These plants are already built, long since paid for, and require no new operating permits. They may no longer be in their prime, but

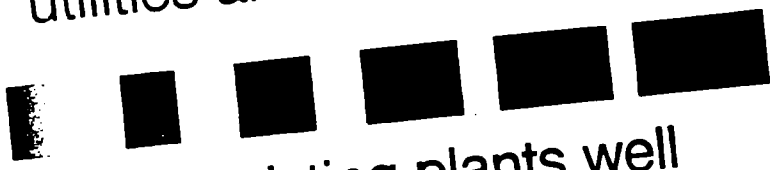
utilities are nevertheless debating whether these veteran units should be retired or revitalized.

The central question is whether 40-year-old fossil fuel plants can be coaxed into generating power for an additional 10, 15, 20, or more years at a competitive cost. If money were no object, any plant could be patched up to run indefinitely, using as many replacement components and as much labor and downtime as required. But money is the object, and utilities coping with today's budgets have to carefully consider whether the cost of producing power from a plant over an extended life of perhaps 60 years



EXTENDING THE LIFESPAN OF FOSSIL PLANTS

The existing fleet of fossil fuel power plants is aging rapidly. As the cost of replacing retired plants becomes more prohibitive, utilities are seeking ways to



operate existing plants well beyond their 40-year design lives. Comprehensive life extension programs are now being developed.

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is less than the cost of producing power with a new plant. This requires objective assessment of older plants, including estimates of their future efficiency, availability, and reliability, the replacement parts they will require, the maintenance and operation techniques necessary to keep them running, and the outage time needed to accomplish necessary upkeep. In some cases, the bill could conceivably top the cost of constructing a new plant.

Because utilities have been considering life extension seriously for only the past few years, such assessments involve many worrisome uncertainties. The high cost of new plant construction and the arduous license and permit processes may discourage utilities from building new plants, but at least these are familiar uncertainties. Life extension, however, is unfamiliar. There are limited methods for evaluating the life of plant components, no infallible rules on maintenance techniques that will carry the plants through another decade or two, no black-or-white decisions on how aging plants should be operated, no cost-benefit analyses guaranteed to compare all the costs of new plant construction with the costs of old plant refurbishment. "We're groping," acknowledges one utility planner, and others in his position concede the same.

Unintimidated, many utilities are seriously considering life-extension programs for their aging plants, and several have initiated active programs in the last year or two. These utilities are working with in-house staff, equipment manufacturers, architect-engineers, and others to develop and carry out successful life-extension strategies. The utilities examine the plants in question, estimate how many good years they have left, and decide what has to be done to keep them running. If the payback looks encouraging, the utility can inaugurate a life-extension program that includes upgrading with new or improved equipment, rigorous maintenance and inspection, more judicious operation, or some combination of those three.

More utilities might consider life-extension programs if there were improved methodologies to assess the benefits of such programs, and better techniques, instruments, and plant components with which to implement them. Such refinements are now being developed by the utility industry, EPRI, equipment manufacturers, architect-engineers, and others.

Fortuitously, much ongoing industry research into improved plant reliability, availability, and efficiency is applicable to plant life extension as well. "Utilities have always sought to maintain maximum plant performance over the design life of the plant," explains John Parkes, manager of EPRI's Availability and Performance Program, Coal Combustion Systems Division, where many plant performance projects are grouped. "Now, because of economics, utilities want to maintain plant performance for 15 or 20 years beyond the original plant lifetime. Most of the projects that we've been working on for the past 6 years can help." To expand the existing research effort, EPRI recently began several new projects that address long-term life extension more specifically; other life-extension projects will be launched as additional utility needs are identified.

Life remaining

The first step toward extending the life of an older plant is to assess its present condition. To do this, a utility performs rigorous inspections, frequently calling in the original equipment manufacturers, architect-engineers, and consulting firms to help with the assessment. Utilities typically concentrate their efforts on the major plant components, such as boilers, turbines, generators, condensers, boiler feedwater pumps, and feedwater heaters. These systems cost the most in dollars and outage time if they fail, and they can make or break a life-extension plan. If several of these systems are debilitated, the utility may decide then and there to abandon life extension.

Much of the plant's present condition depends on how the plant was operated

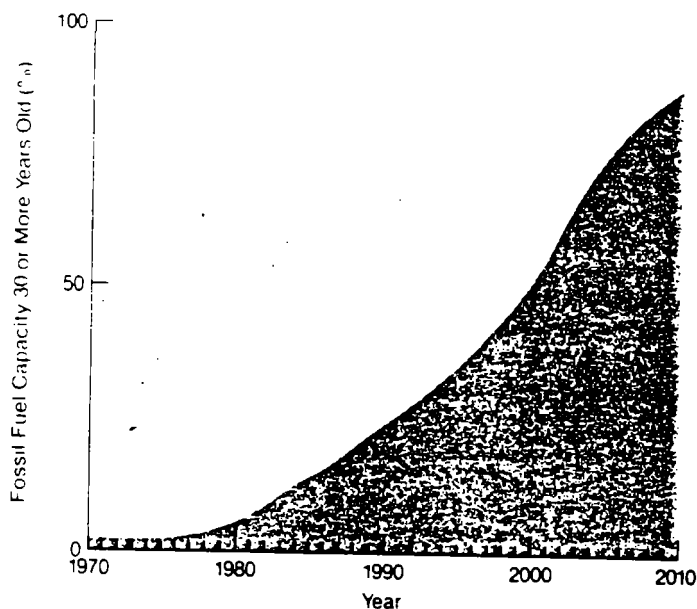
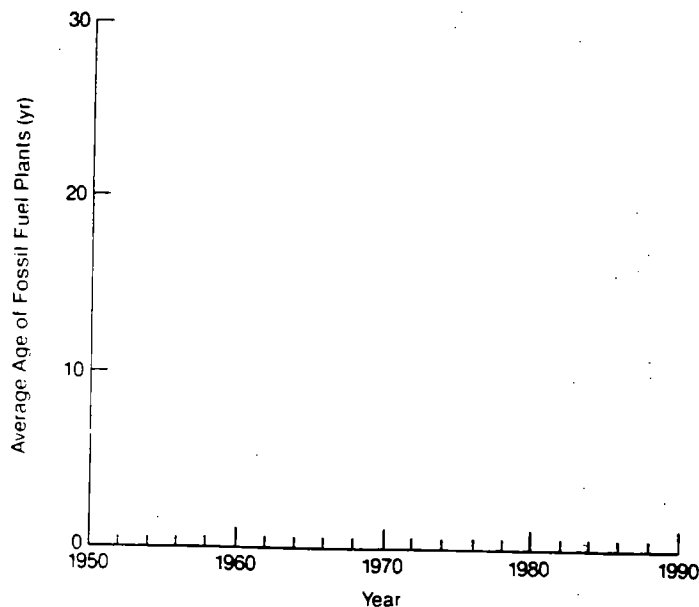
over its lifetime. Many large fossil fuel plants were originally designed as base-load units, intended to run steadily with as few starts, stops, and cyclings as possible. As these plants aged, and as newer, more efficient plants came on-line, the earlier baseload units were relegated to intermediate and cycling duty. These duty cycles, which require increased stops, starts, and load swings, were not what the plants had been designed for, so the thick metal parts of the plants experienced substantially increased thermal stresses. These stresses in turn affected the materials properties of the components and made them more susceptible to failure through fatigue, creep, and other conditions that significantly reduced the remaining life of critical plant components.

Utilities keep records on plant operating history, but direct examination of the plant's components is still the best way to determine remaining life. The trick lies in accurately assessing the record that these components hold. Utilities have been working on developing component examination techniques since the 1960s and 1970s, when new plants that were much larger and substantially different in design than their predecessors began to appear on utility systems. In some cases, the new designs caused plant performance to suffer, and utilities had to figure out ways to predict impending failures. With advance warning, utilities could schedule outages and stockpile spare parts. As a result of this ongoing research effort, today's utilities have techniques and tools at their disposal for determining the remaining life of plant components; yet these are not always as advanced as they need to be, and work to improve them continues.

A case in point is evaluation of thick-walled boiler pressure parts, such as drums, headers, and piping. Current techniques involving accelerated creep tests can provide reasonable estimates of remaining life, but they require large metal samples, which must be cut from operating components. John Dimmer,

Power Plant Demographics

After peaking in the early 1970s, fossil fuel power plant capacity additions have slowed considerably, a casualty of high interest and capital costs, reduced load demand, and increased siting and environmental regulation. In 1973, for example, some 23 GW were added to the industry's capacity; in 1982, only about 7 GW were added. As a direct result of this slowdown in plant construction, the average age of total fossil fuel capacity is increasing. By 1990, according to published statistics, approximately 25% of fossil fuel capacity will be 30 or more years old, and if present trends continue, that percentage will increase after 1990.



subprogram manager for boilers and related auxiliaries, explains that there are limitations on how many samples can be taken for these destructive tests and limitations on where they can be taken from. The techniques are also costly and time-consuming.

Two new techniques offer utilities a promising solution. The first, known as the metallographic technique, involves microscopic examination of very small samples—perhaps $\frac{1}{10}$ in—at high magnification. This technique may provide a direct and quantitative means of evaluating the extent of creep cavitation, cracking, microstructural changes, and other types of metallurgical damage that precede creep failure. The second technique, proposed by the Central Electricity Generating Board (CEGB; England), consists of standard creep testing, but of miniature specimens.

"Because both techniques require such small samples, they are essentially nondestructive, and the samples can be taken from anywhere in plant components," says Project Manager Ramaswamy Viswanathan of EPRI's Materials Support staff. "Periodic update assessments of remaining life should also be a relatively simple matter because there is no limit on the number of locations or type of locations that these minute samples can be taken from. The tests should also be faster and less expensive than today's techniques."

Encouraged by these two techniques, EPRI is working to develop and demonstrate a procedure that combines the two for an estimate of the remaining creep life of boiler pressure parts. Combustion Engineering, Inc. (C-E), and CEGB will perform the work, taking boiler header specimens from plants in the United States and Great Britain. The work should be completed and validated at utility sites by 1986. Although the present study addresses boiler pressure parts, the procedure is expected to be applicable to rotors, casings, and other high-temperature components.

After a utility has estimated how much

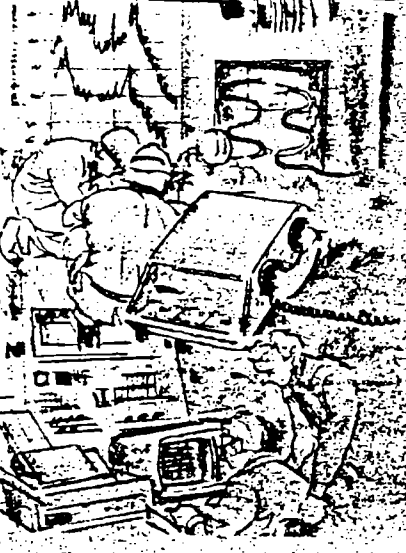
Steps to Life Extension



The first step toward power plant life extension is to assess the condition of the plant, particularly the remaining life of such critical components as boilers, turbines, and generators. Only through accurate assessments can a utility make sound decisions on whether to invest more money in an aging plant. The original equipment manufacturers, architect-engineers, and consulting firms are frequently called in to help with these assessments, which include component examination, diagnostic monitoring, and review of the plant's operating history.



Once a utility is equipped with information on the plant's condition, the second step toward life extension is a hard-nosed analysis that compares the cost of electricity produced by the life-extended plant with the economics of other options, such as a new power plant, load management or conservation programs, or power purchases. As many variables as possible must be considered, including the age of the utility's plants, the fuels used, current and projected reserve margins, general financial condition, opportunities to sell or purchase power, and environmental and regulatory conditions.



If life extension still looks like the best choice after economic analysis, the utility's third and final step is to develop a life extension strategy and implement it. The plan may include upgrading with new or improved equipment, diligent inspection and maintenance, and more careful operation. The strategies vary: a utility with 40% of its capacity idle may consider derating an older unit a good tactic to lengthen plant life; a utility that has a low reserve margin and is already obliged to buy much of its power from neighboring utilities may opt for upgrading to keep an older plant going.

life is left in critical plant components, it has to learn how quickly that life is being expended. This information is essential for life-extension assessments; it also serves as an important guide for setting operating specifications that will see the plant through the next 10 or 20 years of service. Although utilities collect this information in many ways, on-line diagnostic monitoring is becoming increasingly important for identifying plant stresses as they occur. By correlating such operating parameters as temperature, pressure, and operating mode with such variables as vibration levels and metal stresses, operators can get a better reading of how quickly the life of a component is being used up.

Diagnostic monitoring for all areas of the plant has advanced considerably in recent years. Diagnostic systems are available for boilers, turbines, generators, fans, pumps, heat exchangers, and other components. However, like inspections for remaining life, the degree of sophistication of these techniques is not all it could be. "Some monitoring techniques—vibration signature analysis, for example—are well developed and can be implemented in the near term for predictive maintenance procedures," comments Anthony Armor, subprogram manager for plant systems and performance. Vibration signature analysis has already been shown by CEGB to be capable of detecting large transverse cracks in turbine rotors during rundown, the phase when turbines are reducing speed. EPRI and General Electric Co. are now working on a project to see if vibration signature analysis can be used to detect smaller cracks during full-load, full-speed conditions.

"Other monitoring techniques, such as boiler stress and condition analyzers, require further development and field qualification before they can be generally applied to aging fossil fuel plants," says Armor. A boiler stress and condition analyzer that could pick up vital boiler information through thermocouples and relay it to a microprocessor would be

particularly useful because the boiler is the number-one contributor to fossil fuel plant downtime. Although thermal stress analyzers are available for turbines, no system is commercially available to detect and collect information on the loss of life in boiler headers, tubes, drums, and other parts during either constant or cycling operation. EPRI and C-E are now developing a prototype system that can do just that, and demonstrations will begin this year at Consolidated Edison Co.'s Ravenswood station.

Improved analysis and evaluation techniques are also needed to diagnose and correct problems in critical plant components that are subject to failure from a variety of causes. Steam turbine blading is a good example. A turbine blade stress analysis computer program, under development by EPRI and Stress Technology, Inc., will provide an accurate method for predicting the fatigue life of steam turbine blades under actual operating conditions. Diverse stress-inducing factors, such as turbine speed, vibration, damping, and blade stiffness, will be fed into each fatigue analysis, together with material fatigue properties, according to Project Manager Thomas McCloskey. The computer program will provide information to utility engineers on the probable causes of blade problems and recommendations for both blade modifications and operating changes.

The tough decisions

Prepared with information on the aging plant's condition and future prospects, utilities now come to the really difficult decision—they have to determine if life extension is the right strategy for meeting their electricity generation needs, and if it is, how to implement it. Life extension's newness again puts utilities at a disadvantage. They are not yet fully familiar with determining the costs and benefits of keeping an old plant on-line for 20 more years, nor are they completely at ease with selecting life-extension strategies.

Utilities with ongoing life-extension programs have developed their own methods for cost-benefit analysis. However, most of these analyses focus on particular generating units rather than on the utility as a whole. To evaluate life-extension investments from a utility viewpoint, many additional variables must be taken into account: the age of all a utility's plants, the fuels used, current and projected reserve margins, the utility's general financial condition, opportunities to sell or purchase power, and environmental and regulatory conditions.

EPRI's Energy Analysis and Environment Division is now developing a general methodology that takes into account all the important variables for different utility situations. Working from an investment and risk analysis perspective, the methodology will compare new plant construction alternatives to plant upgrading alternatives (including life extension, as well as increased capacity, reliability, availability, and efficiency at existing plants).

"For example," explains Project Manager Dominic Geraghty, "a utility that is unwilling to commit to the large, long-term expenditure of a new plant might find life extension of an old but relatively efficient coal plant to be an acceptable investment of much lower risk. On the other hand, a utility with a high reserve margin, low load growth, and poor financial condition is unlikely to be interested in any capacity investment and may even consider retiring older, less-efficient plants."

The methodology is due to be completed by the fall of 1983 and will be published in workbook form. Varying levels of analytic sophistication will be offered, from a simple payback analysis to a comprehensive, computerized investment risk analysis. The simpler analyses can be used to screen several alternatives, while the more comprehensive analyses can be used as the utility gets more heavily involved in its assessments.

Life extension and new plant construc-

tion are, of course, not the only contenders for tomorrow's utility investments. They must compete for funding with other investment alternatives. Load management, which employs special rate structures and other incentives to achieve a more balanced use of existing plants, is one such option. Conservation programs and power purchases from other utilities are also possibilities.

Because many utilities have had to curtail their capital expenditures programs, it is important to choose options carefully. "Suppose you find out that life extension will save you \$500/kW over new plant construction," says Geraghty. "You still might not want to spend your money on life extension. There may be lower capital requirements, a better return on investment, or lower risks associated with load management or conservation. The difficulty is in developing measures of equivalence with which to compare these very different alternatives." EPRI is developing methodologies that compare a utility's life-extension options with these other options.

How-to for utilities

Once a utility is convinced that life extension might be right for its situation, its next move is to develop a life-extension strategy. Here, again, guidance is required. There are many possible ways to extend plant life, and equally as many uncertainties. If a utility decides to install new or improved components to upgrade a plant, it has to calculate equipment costs, downtime, and ordering lead time. Some equipment can be changed out or repaired with relatively low cost, short downtime, and short ordering lead time; other equipment, particularly major components, entails high capital costs, extended outages, and long ordering lead times. Certain components may be obsolete or the original manufacturers may no longer be in business, and the utility may have to go to considerable expense and trouble to get replacements.

Perhaps the utility can minimize new

equipment costs by instituting a vigilant inspection and maintenance program; but the utility has to tally up the cost of the additional manpower and inspection equipment. Perhaps operating the plant more gently, with slower startups and shutdowns and more-gradual cycling, might carry the plant through the years ahead; maybe the utility should simply derate the unit. Again, the utility has to debate whether it can afford the resulting reduced capacity. There are questions for every life-extension approach, and answers are needed before utilities can proceed confidently.

Some of the answers will come from a new EPRI project initiated this year. This project, a systematic study of how to extend fossil plant life by at least 50%, will develop generic guidelines for an entire plant and implement those procedures on several selected older plants. "A utility will be able to take the results, assess its particular situation, and decide if it should upgrade, derate, shut down, or maybe even mothball its plant for a time," says Armor, who is managing the project. "The strategy is unique for each utility."

For example, a utility with 40% of its capacity idle may consider derating an older unit to be a perfectly acceptable strategy. But a utility that has a low reserve margin and is already buying much of its power from other utilities may not be able to derate anything, even an older plant. To keep an older plant going at rated capacity with minimum outage time, this utility might opt to start an extensive diagnostics and maintenance program to ensure that any outages are anticipated and fully scheduled.

The new project will emphasize major plant components, such as turbines and boilers, and will study life expenditure of these components under such conditions as high pressure, high temperature, fatigue, and elevated rates of erosion and corrosion. Assorted plant operation scenarios will also be studied, including baseload, daily or weekly cycling, and periodic or continuous operation at loads

above or below design levels. EPRI also plans to develop cost-benefit analyses that will consider component capital costs, plant downtime under different inspection and maintenance schedules, and operation decisions to increase life by lowering duty cycles.

Although major systems are the emphasis, auxiliary plant components will also get their share of attention. "From the front-end coal feeders, pulverizers, and conveyor belts to the back-end stacks, scrubbers, and electrostatic precipitators, everything has to be considered," asserts Armor. Boilers and steam turbines in tip-top condition can't run without carefully maintained auxiliary components.

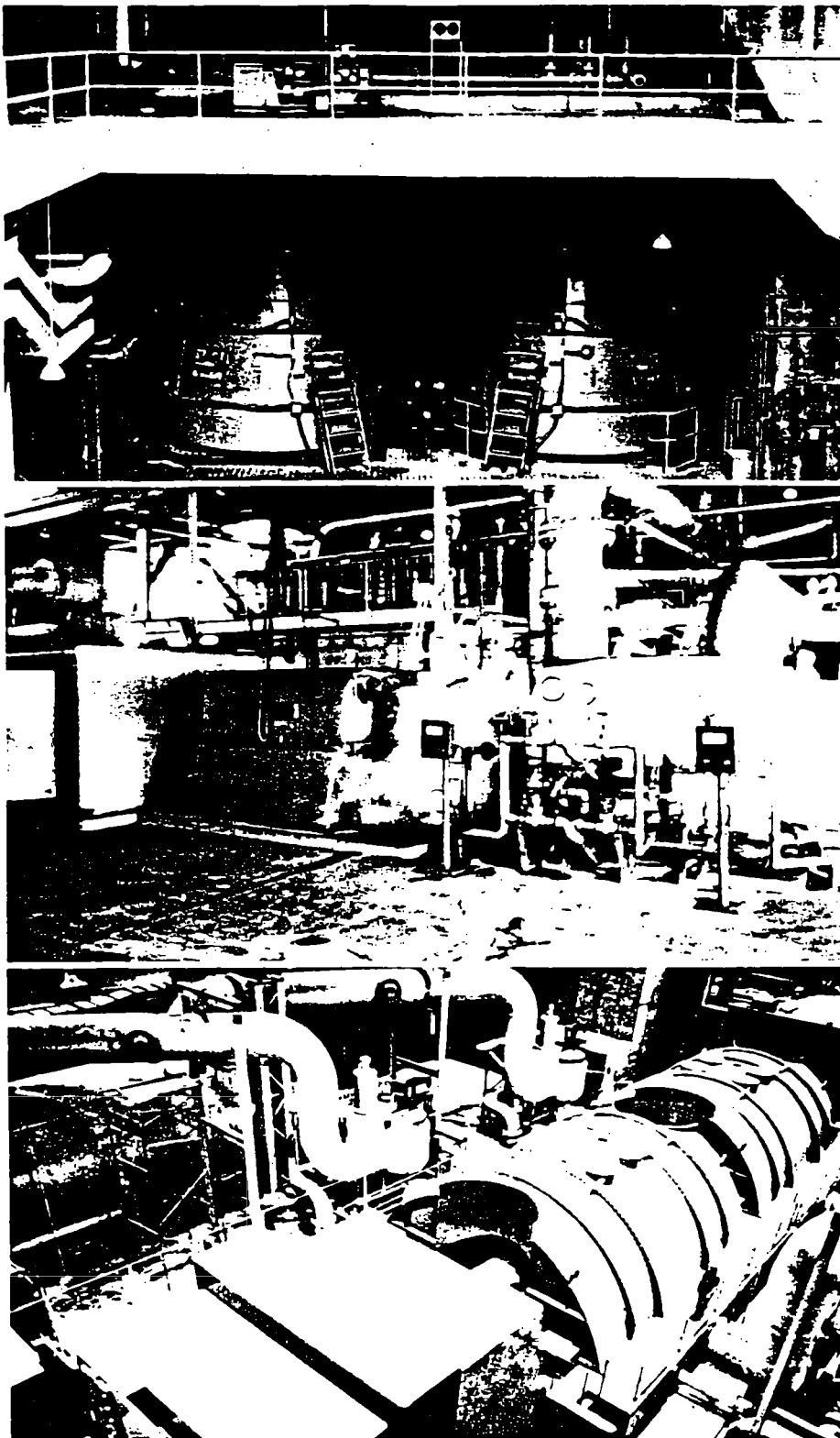
The four-year project has three phases: engineering studies, development of an implementation plan, and implementation. As currently planned, a team consisting of a turbine manufacturer, a boiler manufacturer, an architect-engineer, and several utilities will perform an in-depth investigation of each plant component from the perspective of life expectancy and refurbishment. Based on this engineering evaluation, an implementation plan will be assembled to apply the results to specific host utilities, covering representative unit sizes, ages, and operational modes. The cost of each upgrade will be identified and the overall cost per megawatt defined. Then the plan will be carried out at selected plants belonging to the host utilities. Throughout the project, additional R&D needs may be identified that the Availability and Performance Program will address as required.

Applicable projects

As noted, there are many other projects, both under way and completed, that can be applied in plant life-extension programs even though they were originally developed to improve the reliability, availability, and efficiency of existing fossil plants. These projects deal with a broad range of components, from major equipment to auxiliaries,

In the steam turbine area, for example,

Much of an aging plant's present condition depends on how it was operated over its lifetime. Many large fossil fuel plants were originally designed as baseload units, intended to run steadily with as few starts, stops, and cyclings as possible. Then, as these plants aged and as newer, more efficient plants came on line, the earlier baseload units were relegated to intermediate and cycling duty. Because the increased stops, starts, and load swings of these duty cycles were not what the plants had been designed for, the thick metal plant components experienced increased thermal stress, which in turn shortened their remaining life.



EPRI has evaluated several different coatings to help low-pressure turbine blades and disks resist corrosion. Testing of the turbine blade coatings (ion vapor-deposited aluminum, nickel cadmium electroplate, and fused Teflon powder) is continuing on turbine blades at Southern California Edison Co.'s Redondo Beach station. Steam turbine blades made of a titanium alloy that has superior corrosion fatigue resistance and good structural properties are also being evaluated as a replacement for conventional stainless steel blades. A row of titanium blades is due to be tested at a low-pressure turbine at Commonwealth Edison Co.'s Kincaid station.

Although most life-extension programs will involve large fossil plants with steam turbines, smaller plants with combustion turbines fired with oil and gas have also received life-extension consideration. EPRI's Advanced Power Systems Division cooperated with the Edison Electric Institute to issue guidelines on how to operate combustion turbines for a longer life. The secret, according to Project Manager Richard Duncan, is "mainly TLC—slower startups, slower shutdowns, and more-gradual loading." The division is also working on a thermal barrier coating for combustion turbine blades; this coating will permit turbine operation at higher temperatures or, in the case of aging plants, extended operation at standard temperatures. Advanced blade-cooling techniques will afford similar protection. This past year the APS division began a series of new projects aimed exclusively at life extension for existing combustion turbines.

Major auxiliaries also have a considerable effect on plant life and are an integral part of any life-extension program. Condensers and boiler feedwater pumps are good examples. Condenser systems are the most significant source of corrosives in power plants; if leak-tight designs could be developed to minimize the entry of contaminants and air, utilities could save considerably on reduced corrosion in boiler and turbine systems.

UTILITIES COMPARE NOTES

Utilities may be old hands at keeping power plants humming for 35 or 40 years, but lasting 60 or so years is another story. Because plant life extension is such a new approach, it is helpful for utilities to get together to compare notes, swap experiences, and plot strategies. In Washington, D.C., this past March, a one-day meeting sponsored by Potomac Electric Power Co. (Pepco) attracted some 40 representatives from 15 utilities for that very purpose.

The meeting was reportedly the first time utilities have convened to discuss life extension. Attendees were primarily operation, maintenance, and engineering staff at supervisory levels, all anxious to know exactly how to keep units going past retirement. Presentations were made by utilities that have recently begun life-extension programs, including host Pepco, TVA, Pennsylvania Power & Light Co., Duke Power Co., and Baltimore Gas and Electric Co. EPRI was also on hand to discuss life-extension research.

After the utilities and EPRI explained their life-extension programs, attendees asked questions that ranged from how a utility can decide whether life extension is a good utility choice, to how the utility can actually carry it out. The consensus: "A lot of utilities are starting to move in the direction of life extension," says Anthony Armor, who represented EPRI at the meeting. "But they're still reaching for the methods to justify it and the tools to do it with." By the end of the meeting, the participants agreed to confer again. EPRI plans to hold a similar meeting in 1984 and will invite utilities, equipment manufacturers, architect-engineers, and others. □



Techniques for assessing a plant's condition are still short of perfect, but the industry is working on the problem. For example, to determine the remaining life of thick-walled boiler pressure parts, technicians now cut sizable samples from components for testing. Only so many samples from so many locations can be taken without jeopardizing the component. EPRI, Combustion Engineering, Inc., and England's Central Electricity Generating Board are now developing a new procedure that permits taking an appropriate number of samples from the desired locations; this essentially nondestructive technique requires minute samples, which are then subjected to microscopic examination and conventional creep tests.

Utilities also need improved techniques to determine how quickly plant component life is being used up, and on-line diagnostic monitoring systems are becoming increasingly available for that purpose. For example, EPRI and Combustion Engineering are now developing a boiler stress and condition analyzer that picks up vital boiler information through thermocouples and relays it to a microprocessor.



Minimization of condenser tube replacements would be another benefit. EPRI is now developing a highly reliable, corrosion-resistant condenser. Advanced operation and maintenance guidelines for condensers are also being developed and will be available by early 1984, according to Isidro Diaz-Tous, subprogram manager for steam turbines and related auxiliaries.

EPRI has also been working for many years to understand and resolve the rotor dynamics, cavitation, and hydraulic instability problems that plague boiler feed pumps. Interim design and procurement guidelines have been produced by EPRI and used by many utilities, and EPRI is now beginning a major project to design an improved boiler feed pump capable of highly reliable, long-lived cycling operation. Similar activities are being carried out for pulverizers, fans, feedwater heaters, and air preheater systems.

Even advanced pulverized-coal plant equipment has potential application as retrofit items to extend the life of older plants. One example is the spiral-tube boiler, widely adopted in Europe but used thus far in only one U.S. plant. This boiler's tubes spiral upward around all four boiler walls, unlike the tubes in conventional water-wall boilers, which travel vertically. Because the spiral tubes cross all four walls, the water in all tubes is heated to the same degree, resulting in reduced thermal stress of boiler parts and improved cycling capability. EPRI has plans to develop the technology for an advanced pulverized-coal plant over the next five or so years, and the project will evaluate the potential of the spiral-tube boiler.

This is only a small sampling of EPRI research into improved reliability, availability, and efficiency; yet it gives an idea of the many ways that this research can be applied to life-extension projects.

Down the road

Even if the economy picks up, the existing power plant population is going to

be around for a long time to come. Plans for new plants slowed considerably after peaking in the early 1970s, and many of the plants that were planned were eventually delayed or canceled. As a result, the average age of fossil fuel plants is rising. By 1990, according to EPRI figures, about one-quarter of the fossil fuel plant capacity will be 30 or more years old. After 1990 that percentage could rise even higher. Because the future is always uncertain, it is possible that interest rates may be down, freeing more money for new plant construction. Yet new plants have long lead times, so even plants begun soon would not be completed for about 10 years. Consequently, utilities have to do something now to ensure that they will be generating electricity reliably in the future. Keeping veteran plants running may be the best way to do it. ■

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This article was written by Nadine Linach. Technical background information was provided by Anthony Armor, Isidro Diaz-Tous, John Dimmer, Thomas McCloskey, and John Parkes, Coal Combustion Systems Division; Dominic Geraghty, Energy Analysis and Environment Division; Ramaswamy Viswanathan, Research and Development; and Richard Duncan, Advanced Power Systems Division.

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Many utilities now face major decisions about their older fossil fuel power plants. By 1990 more than half of U.S. fossil fuel plants will be more than 30 years old. Traditionally, that has been their expected useful lifetime, based on the assumption that new generating units would be added to meet load growth requirements and produce power at lower cost because of advances in technology. In recent years, however, slower load growth and the increasingly high economic risks associated with building new plants have made many

utilities consider ways to improve the performance of older units and keep them on-line well beyond originally anticipated retirement dates.

Unlike the celebrated "one-hoss shay," which kept on going until it completely fell apart, a power plant doesn't so much wear out as become uneconomical to use. Given careful operation and maintenance, a plant can continue to generate power safely and reliably for 50 to 60 years, or longer. The challenge now facing utilities is how to make such performance improvement and life extension more economical.

Major decisions

A wide spectrum of options is available to utilities that are trying to get the most out of their aging fossil fuel plants. At one extreme, a utility with zero load growth and excess capacity would probably choose to derate or even decommission some older plants. At the other extreme, a utility with continued load growth and low reserve margins would probably benefit from upgrading some existing plants.

Several major decisions have to be made before choosing among the available options. A utility must determine what levels of availability and efficiency are acceptable from an older plant, given the increasingly difficult task of main-

Longer Life for Fossil Fuel Plants

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taining it. The effect of significant changes in inspection and maintenance procedures also has to be considered. And the utility has to judge the level of investment it can budget over an additional 20-40 years to sustain a plant. Depending on the outcome of such decisions, specific technologies and procedures can be evaluated. Upgrading, for example, could involve conversion to fluidized-bed combustion, with its advantages of greater fuel efficiency and inherently low emissions. A less-ambitious program might focus on reducing forced outages by requiring more-frequent and more-detailed inspections. Such a program has reaped considerable success on a nationwide scale in Japan, where reserve mar-

gins are considerably lower than those in the United States. There, for example, boilers are inspected every year and turbines every two years.

EPRI's strategy is to provide utilities with both the analytic tools that can help in making major decisions about older plants and some increasingly sophisticated monitoring technology that can help in implementing the option chosen. Recently published generic guidelines outline a phased approach to fossil fuel plant life extension that utilities can use to help establish programs related to their own needs. Economic analysis of

related case studies shows how such programs can save a utility hundreds of millions of dollars, compared with the cost of replacing older plants. EPRI is now working with 10 utilities to determine how the generic guidelines can best be implemented.

Economic advantages

Over the lifetime of a typical utility power plant, the cost of producing electricity often follows a broad U-shaped

The utility industry has a large investment in fossil fuel plants built before 1960. Keeping these plants operating economically into the twenty-first century is becoming more and more important for utility system planning.

DAY—UNIT NO. 4

curve, commonly known among planners as the bathtub curve. Early in a plant's life, costs fall rapidly as utility personnel become familiar with the new equipment and put it through a shake-down period. A long period of relative cost stability follows, until costs begin to rise as increased expenditures are required to maintain the aging equipment. Such expenditures are accelerated if a plant is shifted to cycling or peaking duty.

Several factors make life extension programs strategically attractive at the present time. Such programs are generally less capital-intensive than new plant construction. Depending on the specific plant characteristics, investments in the

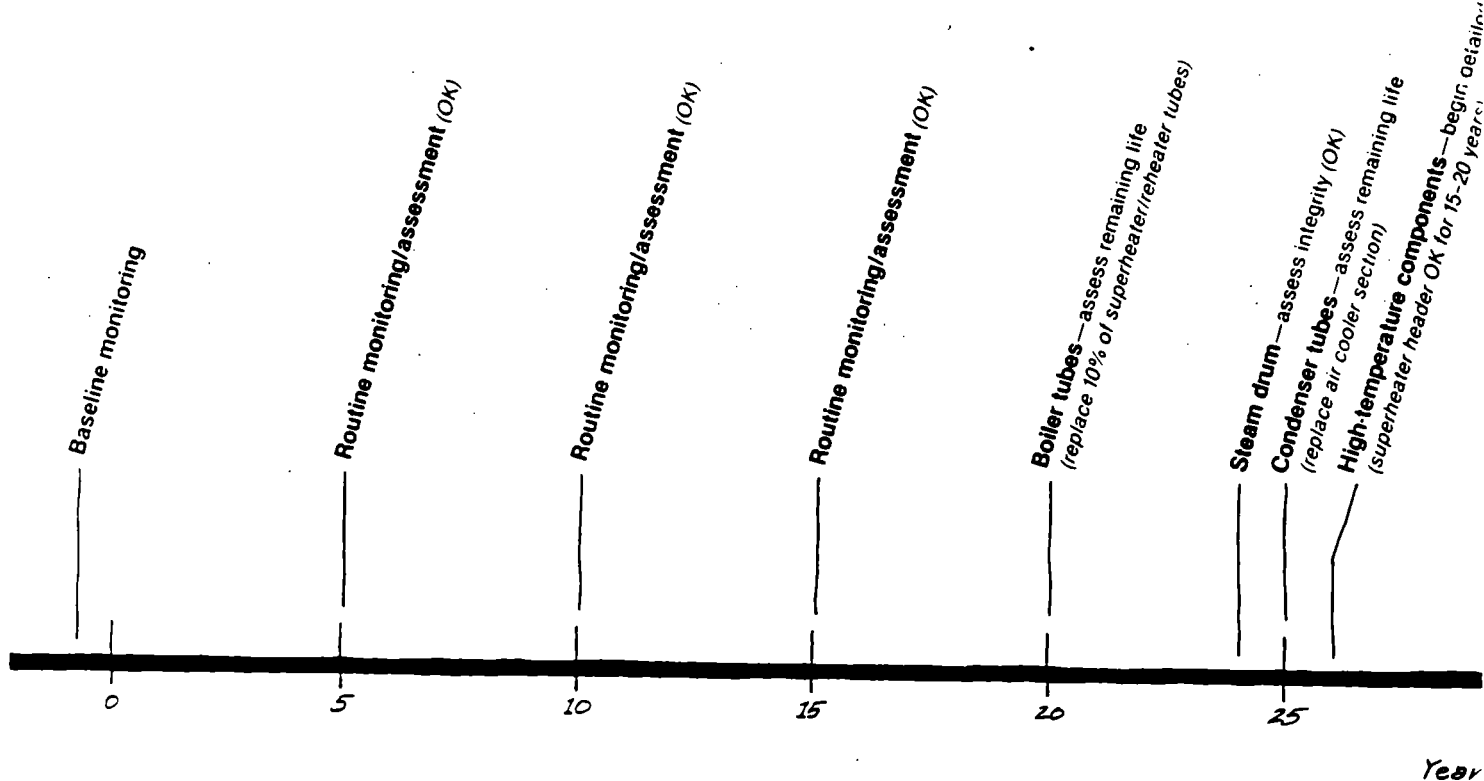
range of \$125/kW to \$625/kW could be expected for life extension, compared with \$1300/kW to \$1900/kW for a new plant. In addition, life extension usually involves relatively short lead times and can be implemented in small increments. The programs may, however, require a relatively long payback period because major economic benefits are greatest after the time when new capacity—with its heavy up-front costs—would otherwise have had to be built.

To evaluate the economic advantages of life extension more precisely, EPRI researchers interviewed utility personnel and proposed representative case studies that illustrate a range of scenarios. These analyses confirmed that life extension

generally offers the highest savings for plants with high utilization factors, large potential for performance improvement, low variable costs, high replacement power costs, or opportunities for off-system sales of electricity. The case studies showed that some utilities could save hundreds of millions of dollars through a systemwide program of life extension. "Utilities have been considering several nontraditional alternatives to investment in new generating capacity," says Dom Geraghty, who was project manager for much of the economic analysis of life extension. "They are considering load management options, conservation programs, and cogeneration, in addition to extending the life of certain

Preventive Maintenance—A Sample Schedule

Close monitoring and regular assessment of components are the surest ways to maximize the useful life of a power plant. A regular inspection schedule, such as the much simplified example shown below, anticipates the most likely problems for major component groups and allows repairs to be handled largely during scheduled outages.



plants. Our work has shown that life extension programs can be very attractive but that they need to be evaluated systematically, with fair comparison with other options in terms of how they meet broad corporate objectives."

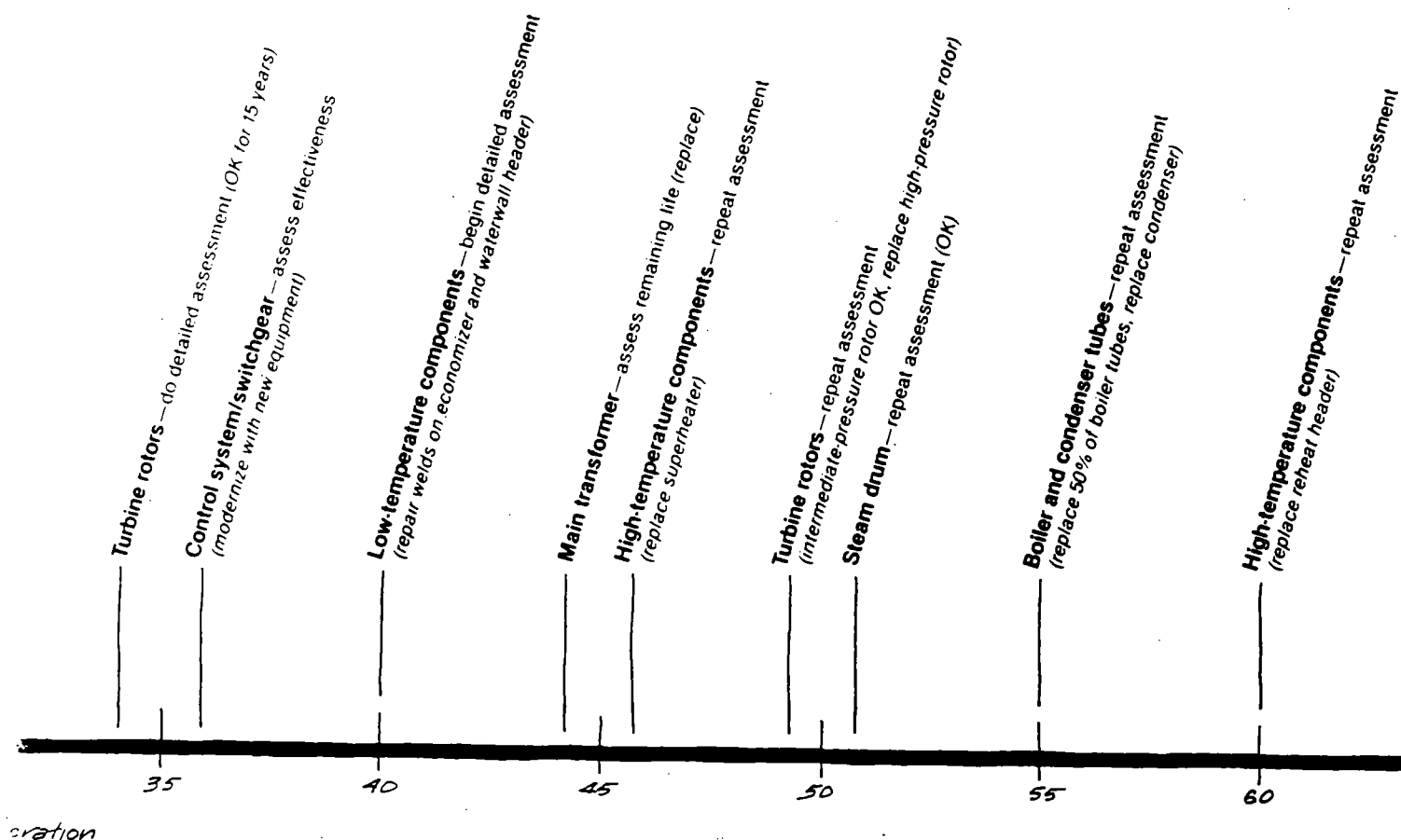
A four-stage strategy

Just such a systematic approach is presented by the recently published *Generic Guidelines for the Life Extension of Fossil Fuel Power Plants* (CS-4778). These guidelines were developed for EPRI by Daedalus Associates and Delian Corp., based on specific life extension projects at several U.S. utilities and on information gathered from foreign utilities. The purpose of the guidelines is to encompass

this technical experience in a framework that other utilities can use to develop life extension programs tailored to fit their individual needs. The guidelines are organized around a life extension strategy that consists of four sequential stages: corporate planning, plant assessment, component assessment, and refurbishment and follow-up. Information from each stage is brought together in a computerized data base called the Integrated Life Extension Management (ILEM) Model. During the first stage, corporate planning, a benefits analysis is performed that considers a broad range of life extension alternatives. Much of the work in this stage consists of gathering and analyzing data related to the entire

utility system. The eventual product includes a ranking of plants to be considered for life extension, based on their economic value to the system as a whole, together with an estimate of costs and a schedule for implementation.

Historical data on specific candidate plants are gathered and analyzed during the second stage. This information can then be evaluated in the context of data from sister plants, available from the North American Electric Reliability Council (NERC). One of several approaches can then be used to rank critical plant components for further study. One utility, for example, might rank components on the basis of expected remaining life, postponing further action until



necessary. Another utility might prefer to act immediately to refurbish equipment whose improved performance would provide the fastest payback. Yet a third might focus on preventive maintenance at its highest-value generating units.

The component assessment stage leads up to a final decision on which components in the selected plants will be refurbished and the schedule for doing so. This stage involves a three-level assessment of various components to estimate their remaining life expectancy and to refine estimates of refurbishment costs. Each level requires more-accurate data and more-rigorous inspection of individual pieces of equipment. If the assessed remaining life of a plant component is less than the proposed life extension period for that plant, the utility then decides whether to repair, modify, or replace it. Once these critical decisions have been made, refurbishment of a plant can proceed through normal procurement procedures, usually during regularly scheduled outages. As part of this final stage of life extension, several follow-up activities may be needed to maintain performance of the refurbished plant. These activities might include, for example, the use of on-line monitoring systems to fine-tune operations at a plant or the establishment of a special data base and inspection system to track the history of major pieces of equipment throughout a utility.

EPRI has developed a variety of monitoring systems that can help utilities bolster inspection and improve plant availability. A boiler stress analyzer, for example, tracks long-term creep fatigue in headers, drum, and steam lines. A computer-based vibration monitoring system can detect such damaging conditions as misalignments and blade rubbing in turbine generators, pumps, and fans in time to prevent major failures. EPRI studies have indicated that 30–50%

of all plant downtime is attributable to problems in such rotating equipment.

"Much of what we've included in our life extension guidelines is already standard practice in other countries," says Project Manager Barry Dooley. "The monitoring and assessment procedures we're suggesting can be applied to new plants as well as old—and doing so will help increase plant availability later in life. That's why a phased approach is so important. It enables a utility to plan ahead and minimize outage time."

Case studies

The experience of several utilities throughout the country helps to illustrate some of the benefits that can be expected from life extension programs. A particularly useful example is provided by Potomac Electric Power (Pepco) because postrefurbishment data are available to compare with forecasts made before the work was done. This program involved five units at the company's Potomac River station, ranging in age from 28 to 36 years. Analysis of the units began with an extensive review of Pepco and NERC data on plant availability and later included a comprehensive inspection plan and a materials sampling program. As a result of these efforts, a decision was made to refurbish some components in each of the generating units. Third-stage superheaters, for example, were replaced in three units, boiler casings were patched in two units, and turbine rotors were replaced in two units—in addition to other work.

Results for Unit 1 show that before refurbishment, availability at the unit had been declining steadily, but after major boiler work, availability of the unit rose 9%. Similarly, net heat rate at the unit was lowered to 12,600 Btu/kWh from a projected 13,200 Btu/kWh, which would have been expected if refurbishment had not taken place.

A case study sponsored by EPRI involved a systemwide assessment of 15 coal-fired and 2 oil-fired units at Con-

sumers Power. Scenarios were developed that assessed the value of individual life-extended units to the system as a whole. The study concluded that all the company's existing fossil fuel plants would make good candidates for a life extension program and that both customers and investors would thus benefit.

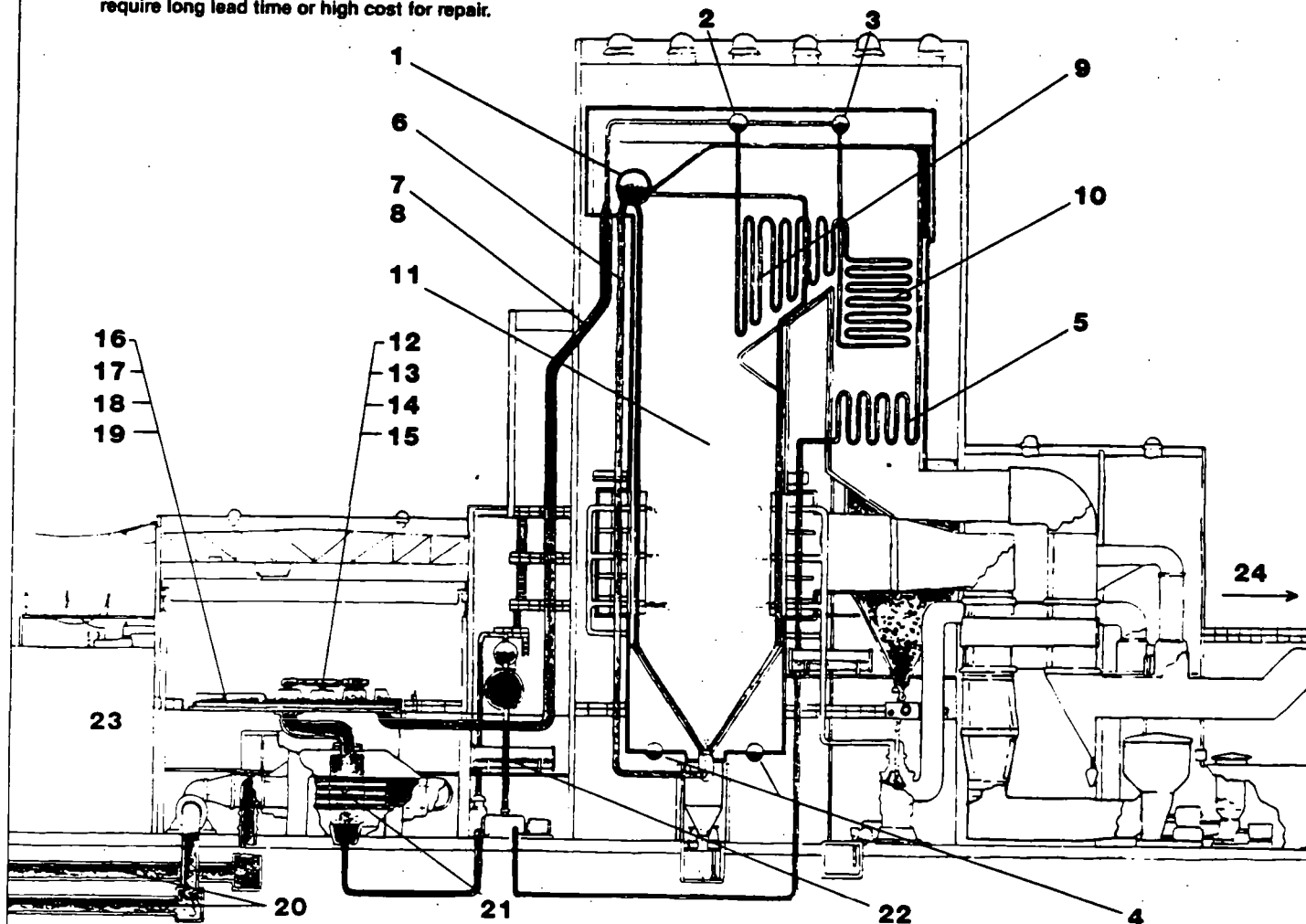
"This work has helped us identify some problem areas and gives us a head start if plant modifications are undertaken," says John Reynolds, who was the utility's project manager for the case study. "One benefit was to show that the long-term phased approach is the most rational. A couple of years ago vendors were beating the bushes for major plant overhauls—lump sum projects. Our work with EPRI shows that this is not necessarily the most economical approach. A better idea is to pursue enhanced maintenance." Similar convictions are expressed by Richard Borsellino, the supervisor of mechanical engineering at Niagara Mohawk. "A phased approach," he says, "is paramount to any successful life extension program. If you miss any step, then later on you could wind up without enough information on a systemwide basis to justify the work needed. By conducting the sort of systematic assessments needed to answer that question, we've learned a lot about our equipment and discovered flaws that might have gone unnoticed in routine examination." He concludes that correcting these problems is a modest expense compared with building new capacity—about \$200/kW for most of the Niagara Mohawk plants examined so far.

Risk assessment

Although the costs and risks associated with life extension programs are much smaller than those involved in building a new plant, various uncertainties have to be taken into account. Some of these uncertainties are related to unforeseen malfunctions or catastrophic failures at refurbished plants, and their effect can be

Critical Components

About two dozen critical components are responsible for the majority of problems in aging fossil fuel plants. Their failure, resulting from such mechanisms as fatigue, creep, corrosion, erosion, and mechanical wear, can force an outage, endanger plant personnel, or require long lead time or high cost for repair.



- | | | |
|----------------------------|------------------------------|------------------------------------|
| 1 Drums | 9 Superheater tubing | 17 Stator windings |
| 2 Superheater headers | 10 Reheater tubing | 18 Stator insulation |
| 3 Reheater headers | 11 Waterwall tubing | 19 Retaining rings |
| 4 Waterwall headers | 12 Turbine valves | 20 Intake and discharge structures |
| 5 Economizer inlet headers | 13 Rotor | 21 Condenser |
| 6 Downcomers | 14 Steam chest | 22 Feedwater heaters |
| 7 Main steam piping | 15 Turbine casing and shells | 23 Main transformers |
| 8 Hot reheat piping | 16 Rotor shaft | 24 Stack liners |

analyzed by using available risk assessment tools. Less amenable to analysis, however, are the uncertainties that result from unresolved regulatory issues. To help with technical risk assessment in a life extension program, EPRI has developed a microcomputer spreadsheet that can quickly analyze a variety of scenarios. This model was developed by contractor Temple, Barker & Sloane, which was also involved in most of the other EPRI work on the economics of life extension. For each utility, this relatively simple spreadsheet can be individually calibrated with two runs of a large production cost model. Using the microcomputer model, risk assessment relevant for life extension has been demonstrated for a sample project involving a cracked turbine rotor. Three increasingly sophisticated types of analyses were performed, including identification of critical variables, determination of an economic breakeven point within a given range of variables, and a probabilistic analysis involving joint occurrence of

undesirable events. These analyses were conducted by considering the economic risks of three different strategies: immediate retirement of the plant, replacement of the rotor in kind, and upgrade of the turbine in conjunction with rotor replacement.

According to the scenario judged most likely, simple replacement of the rotor would return \$13.5 million (net present value) on an investment of \$4.7 million, whereas upgrade would return \$13.9 million on an investment of \$6.6 million. The probabilistic analysis showed, however, that the upgrading strategy involved more downside risk than did the replacement strategy. "Actual results for a real utility would depend on specific circumstances," comments EPRI's Dom Geraghty, "but the fact remains that there will be considerable uncertainty about the availability and reliability of a life-extended plant. If, in a particular situation, a plant had a catastrophic failure within 15 years after refurbishment, the utility could suffer a net loss on its in-

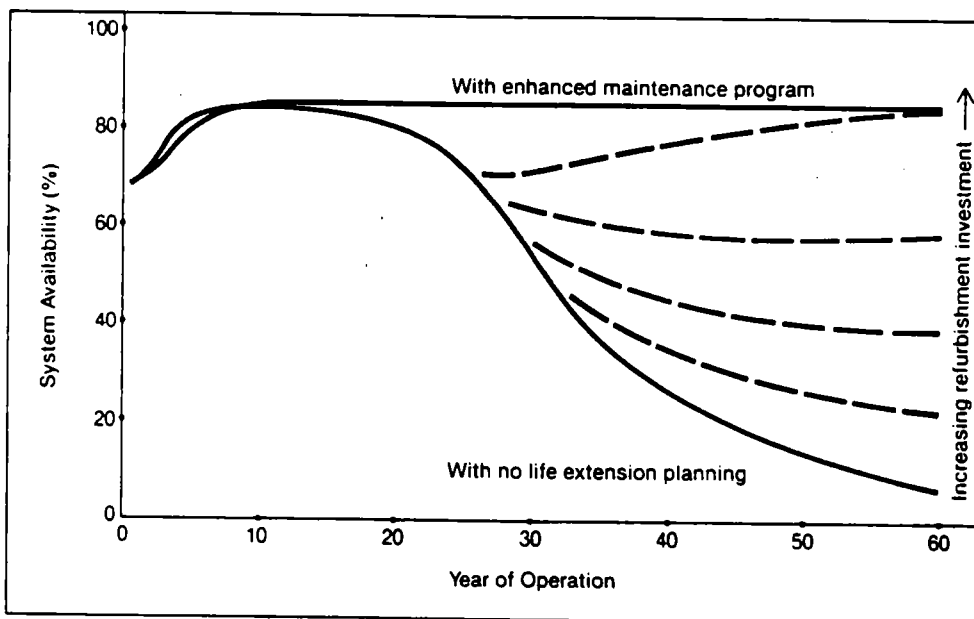
vestment, depending on such factors as demand growth and capacity margins."

Far more difficult to estimate are the risks involved in questions of compliance with air quality regulations. According to the Clean Air Act, if the cost of refurbishment exceeds 50% of a "comparable new facility," a plant may be deemed "restructured" and thus subject to New Source Performance Standards (NSPS). This regulation has not yet been tested, and utilities are unsure whether the 50% trigger refers only to a one-time capital expenditure or to aggregated refurbishment costs over several years. In addition, an extended-life plant could also be subject to NSPS if the emission rate of any pollutant covered by these standards is increased by refurbishment. Congress is now considering several pieces of legislation related to this issue. The most stringent would require all plants that are 30 years old by 1991 to retire or comply with NSPS.

The bill would also require all units to meet stringent emissions requirements

Approaches to Life Extension

Experience has shown that as a generating unit nears the end of its useful operating life, deteriorating component reliability sharply reduces the plant's availability. Life extension procedures begun around year 25 generally require major plant refurbishment, with the results roughly proportional to the amount of additional investment. Some utilities have found that an enhanced maintenance program over the entire life of the system, involving relatively modest efforts beyond a standard program, will avoid the availability dip altogether. This approach has the advantage of spreading the incremental cost of improvement over the entire operating life of the plant.



or be restricted in their total hours of remaining life. Additional legislation on acid deposition could also affect a utility's ability to extend the life of certain plants. Whether life extension would remain economically attractive if refurbished plants had to comply with NSPS would depend on the specific cases.

"NSPS compliance is a risk that depends on regulatory interpretation," responds the manager of life extension projects at a major eastern utility. "But even if we have to comply, the dollars involved are still less than the cost of a new unit—unless there's some specific problem like not enough room at the site for adding a flue gas desulfurization unit." Utilities are also considering a variety of new clean coal technologies, such as advanced coal cleaning and sorbent injection, that might ultimately be retrofit on older plants with lower cost and operating impact. Yet another alternative already being demonstrated by the utility industry is refurbishing, repowering, and reducing emissions with fluidized-bed combustion.

Preparing for the future

The next stage in EPRI's work on fossil fuel plant life extension will be a series of demonstrations involving use of the generic guidelines at 10 utilities. This two-year demonstration program is already getting under way, with selection of contractors and host utilities. The goal of this work will be to demonstrate the generic guidelines by having each utility determine the approach to life extension that best meets its individual needs. Actual plant refurbishment would follow later, and its cost is not included as part of the demonstration program. As a first step, contractors will prepare training materials for three major areas of activity: corporate planning, residual life assessment, and development of the ILEM model. These materials can then be used by utility personnel to choose various planning options and determine the most cost-effective way to do plant life

extension assessments. Contractors will provide technical support to the host utilities as they proceed in implementing the guidelines. "We're choosing host utilities to cover a spectrum of needs," says Barry Dooley. "Some utilities have extensive inspection programs in place and might only be interested in adding the ILEM model. Others are just beginning and would start at the earliest stages of corporate-level planning. On the basis of the experience gained in these demonstrations, we expect to get better estimates of costs and benefits for different life extension approaches. We'll also be updating the guidelines themselves from what we learn."

Even before the guidelines were published, EPRI held a series of life extension advisory group meetings that provided an opportunity for both technology transfer to utilities and feedback on various approaches. Such direct, two-way communications between EPRI and member utilities on the subject of life extension will continue in conjunction with the demonstration program. "I got a lot of help from EPRI, even though we're already using our own phased approach," comments Herbert Stowe, plant life extension project manager for New England Power. "The advisory meetings were tremendously effective; they provided a smorgasbord of choices from what other people were doing. It's nice to see we aren't working in a vacuum." New England Power is now in the second stage of a life extension program involving detailed inspection of all its generating units over a five-year period.

Another EPRI effort may affect how utilities approach life extension issues related to rising competition in electric power supply. A recent EPRI study was conducted on how such increased competition could lead to new production strategies. Life extension was considered as a key option for reducing costs and increasing profitability.

Under the previous, less competitive conditions, the report concludes, prolonged outage or retirement of a plant at a particular utility would probably result in less electricity supply for a given customer demand and thus result in higher prices for electric power. In today's increasingly competitive marketplace, however, prolonged outage or retirement of the plant would more likely result in a loss of market share to another supplier. In one example considered during the study, retirement of a coal-fired plant resulted in loss of about 80% of the sales represented by the plant's output.

"Today's marketplace for electric power is rapidly rendering older production strategies obsolete, and life extension programs have to be considered in that context," concludes Geraghty. "If we adopt a price-driven perspective, instead of the load-driven perspective of the past, one of the main opportunities a utility has to improve its competitive position is through improving the performance and extending the lives of existing plants. In addition, we can also help improve the productivity of the U.S. economy by making fullest use of valuable existing assets." ■

Further reading

Project Risk Analysis: A Case Study of Plant Life Extension. Final report for RP2074-1, prepared by Temple, Barker & Sloane, Inc., March 1987. EPRI P-5087

Developing Competitive Power Production Strategies for Existing Power Plants. Final report for RP2074-1, prepared by Temple, Barker & Sloane, Inc., February 1987. EPRI P-5046

Generic Guidelines for the Life Extension of Fossil Fuel Power Plants. Final report for RP2596-1, prepared by Daedalus Associates, Inc., and Delian Corp., November 1986. EPRI CS-4778

Economic Evaluation of Plant-Upgrading Investments (Vols 1 and 2). Final report for RP2074-1, prepared by Temple, Barker & Sloane, Inc., February 1985. EPRI EA-3890

This article was written by John Douglas, science writer. Technical information was provided by Barry Dooley, Coal Combustion Systems Division, and Don Geraghty, assistant to the executive vice president of research and development. Additional information was provided by Jeff Byron, Ed Cichanowicz, and Mike Miller, Coal Combustion Systems Division, and by Stan Vejtasa, Planning and Evaluation Division.

Proceedings: Fossil Plant Life Extension Conference and Workshop

**CS-4207
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R E P O R T S U M M A R Y

SUBJECTS	Plant systems and performance assessment / Boilers and related auxiliaries / Steam turbines and related auxiliaries / Power system planning	
TOPICS	Fossil fuel power plants	Life extension
	Power plant availability	Maintenance
	Power generation planning	Operation
AUDIENCE	Generation managers and engineers / R&D managers and engineers	

Proceedings: Fossil Plant Life Extension Conference and Workshop

By 1990, one-quarter of U.S. fossil-fired power plants will be close to the traditional 30-year retirement age. Because of today's economics, such plants will be called upon to supply reliable service for an additional 20 to 30 years. These proceedings review the technical challenges, engineering approaches, and investments involved in extending plant life.

BACKGROUND	Typically, a fossil fuel power plant is designed for a 30-year life. But as new fossil plants become increasingly difficult to finance and planned nuclear units are deferred or canceled, efforts are being made to extend the life of aging fossil plants to 50 or 60 years of reliable service. To explore this issue, EPRI and EEI sponsored a three-day workshop in Washington, D.C., in June 1984.
OBJECTIVE	To bring together utility engineers and managers, manufacturers of power plant components, and architect/engineers to exchange ideas and experiences on maintaining and operating aging fossil-fired plants.
APPROACH	More than 200 representatives of U.S. and foreign utilities, architect/engineering firms, suppliers, government agencies, and research organizations associated with the utility industry were invited to present papers on the many issues involved in extending plant life. The workshop included sessions on the following topics: utility life extension programs; generation planning and the regulatory environment; technical approaches to estimating remaining life; and boiler, turbine generator, and balance-of-plant life extension projects. In addition, utility working groups discussed some issues from utility perspectives.
KEY POINTS	• Turbine and boiler manufacturers now offer programs to upgrade their equipment in fossil-fired plants. Such programs include modernization, adaptation for cycling duty, and major plant life extension. Balance-of-plant equipment can be evaluated for upgrading by the utility or an architect/engineer. • Although individual engineering and economic estimates of the cost of upgrading an aging plant varied in their level of detail, utilities reported that

DISCUSSION GROUPS

Groups comprised of utility representatives only met to discuss the following topics:

- Air quality regulatory issues.
- Techniques for estimating remaining life.
- Setting up a life extension program.
- Techniques for balance of plant evaluation.

The following pages summarize these discussions.

AIR QUALITY REGULATORY ISSUES

Summary

The primary purpose of this work group was to discuss potential federal air quality regulatory requirements which could apply to certain fossil plant life extension projects. The work group focused on EPA's new source performance standards for steam-electric generating plants, in particular provisions related to modified or reconstructed sources. The principal conclusion of the work group was that the economic feasibility and risks of fossil plant life extension projects can be significantly affected by potential air quality regulatory requirements. Utility engineering and environmental project personnel should work together with legal staff during the planning stages of such projects in order to evaluate the likelihood of applicability of air quality regulations and maximize the possibility of qualifying for exemptions.

During the course of our discussions, the work group briefly reviewed the federal new source performance standards regulatory requirements, discussed the modification and reconstruction provisions of these rules and exemptions, and identified several key issues requiring further clarification. The work group concluded with the identification of several points of consensus based upon its deliberations.

New Source Performance Standard Regulatory Requirements

The three principal pollutants regulated by federal new source performance standards (NSPS) applicable to steam-electric generating plants are sulfur dioxide (SO_2), oxides of nitrogen, and particulates. The most recent revisions to the NSPS, which apply to sources commencing construction on or after September 19, 1978, are summarized below:

SO_2 - maximum allowable emission rate of 1.2 lbs/MBtu and minimum allowable emission reduction requirement of 90%. Reduction requirement declines to no less than 70% for a maximum allowable emission rate of 0.6 lbs/MBtu.

Oxides of Nitrogen - 0.5 lbs/MBtu for subbituminous coal and 0.6 lbs/MBtu for bituminous coal.

Particulates - 0.03 lbs/MBtu

These federal requirements are minimum acceptable performance standards. Under the Clean Air Act, states are allowed to adopt even stricter requirements.

Life extension projects may result in the affected facility being classified as a modified or reconstructed source, triggering NSPS requirements. Physical or operational changes which increase emission rates qualify as modifications. Irrespective of whether a facility is considered modified, if the fixed capital (defined as capital needed to provide all depreciable components) cost of the project's replacement components exceeds 50% of the fixed capital cost for a comparable, entirely new facility and if compliance is technologically and economically feasible, a facility is considered reconstructed and subject to federal NSPS requirements. Unless a project can qualify under the exemption provisions, a modified or reconstructed facility would be subject to EPA's 1978 NSPS regulations and scrubber retrofits would be required.

Exemptions From NSPS Requirements

Modification Exemptions:

The four principal modification exemption categories are:

1. Routine repair, replacement, or maintenance, even if an increase in emission rate results.
2. Increases in capacity factor ("hours of production").

3. Firing of an alternative fuel if the facility was designed to accommodate such fuel prior to August 17, 1971 (the date that the first NSPS regulations became applicable). For example, a facility initially designed to accommodate coal, but which subsequently converted to oil (for emission reduction or other reasons), can convert back to coal and qualify for an exemption.
4. Increases in production rate (exceeding original design capability) if no capital expenditures result.

Reconstruction Exemptions:

If the projected fixed capital costs of replacement components for a life extension project exceeds 50% of corresponding capital costs for a comparable, entirely new facility, the facility owner is required to furnish information to EPA prior to commencing construction for a determination on the applicability of or exemption from the NSPS reconstruction provisions. EPA reviews the following information in evaluating whether or not compliance with the NSPS requirements is technologically and economically feasible:

1. Description of existing air pollution control equipment and any new air pollution control equipment associated with the project.
2. Estimated fixed capital cost of replacements and for constructing a comparable, entirely new facility.
3. Estimated additional life of the affected facility.
4. The projected increase in emissions (if any).
5. A discussion of technological and/or economic NSPS compliance limitations.
6. Nature of the changes to be made.

Once again it is important to note that this is a summary of modification and reconstruction exemption provisions for the federal NSPS regulations. State regulations may be more stringent.

Issues Requiring Further Clarification

Several provisions in the NSPS regulations and associated exemptions are considerably subjective in nature. Because of this and the dearth of experience to date in evaluating NSPS applicability to life extension projects, there are a number of issues which require clarification. Several of these are:

1. What is considered "routine" repair, replacement, or maintenance for the purpose of qualifying for an exemption to the NSPS modification provisions? Some aspects of life extension projects may not be considered routine repair/maintenance/replacement. To the extent possible these projects should be identified as upgraded maintenance programs.
2. Where is the line drawn between capital versus maintenance expenditures? Various agencies such as FERC, IRS, EPA, SEC and state public utility commissions may have different interpretations.
3. How will phased projects be treated with respect to the "50% capital cost" test in the NSPS reconstruction provisions? Over what period of time would costs be aggregated? Could this provision apply retroactively?

Consensus Points

Following is a listing of points for which general consensus existed among the work group participants:

1. Life extension projects will result in increased regulatory agency sensitivity to facility retirement dates contained in generation expansion plans and used as the basis for rate case depreciation allowances. Regulatory agencies may contend that since life extension projects will defer the need for new generation, additional pollution control should be required for the older, higher emitting affected plants.
2. It may be appropriate to downplay the life extension aspects of these projects (and extended retirement dates) by referring to them as plant restoration (reliability/availability improvement) projects. To the extent possible, air quality regulatory issues associated with these projects should be dealt with at the state and local level and not elevated to the status of a national environmental issue.
3. To the extent possible, project elements should be stressed as maintenance related activities to maximize chances for NSPS exemptions. Utility accounting practices play a significant role here.
4. With respect to the "50% capital cost" test in the NSPS reconstruction provisions, a reasonable interpretation of the term "facility" is any plant component associated with the emission of air pollutants (e.g., pulverizers, burners, combustion air system, steam generator, etc).
5. With respect to the "economic feasibility" test in the NSPS reconstruction provisions, a threshold cost should be based on some percentage of the avoided cost of new capacity through comparison of levelized annual costs.

Chapter 46

Life Extension and Upgrades

Older boilers represent important resources in meeting energy production needs. A strategic approach is required to optimize and extend the life of these units. Initially, routine maintenance is sufficient to maintain high availability. However, as the unit matures and components wear, more significant steps become necessary to extend equipment life. At the same time, boiler upgrades can incorporate technology advances to increase unit efficiency and availability and to address current operating problems or changing operating needs. Design changes can accommodate new fuel sources and permit a boiler to more easily accept cycling service.

Key issues to consider when optimizing a unit include understanding how boilers age, identifying the critical components, and determining the general types of upgrades possible. These elements are then combined with operating experience and equipment condition assessments (see Chapter 45) to develop integrated strategic plans for individual boilers.

Power plant aging

At the beginning of power plant life there is a period in which the operators and maintenance crews learn to work with the new system and minor problems are resolved. This period may be marked by a high forced outage rate, but this quickly declines as the system is broken in.

As the plant matures, the personnel adapt to the new system, and any shortcomings are overcome or better understood. During this phase the forced outage rate remains low, availability is high, and the operating and maintenance costs are minimal. This mature phase normally lasts 25 to 30 years, depending on the design and use of the unit. The power plant is usually operated near rated capacity during this period.

Following this phase, the aging process becomes noticeable. Forced outages and maintenance costs increase, and availability declines. Component end of life usually causes the higher forced outage rate. Occasional operational error and the degradation of boiler components due to erosion, corrosion, creep and fatigue lead to localized failures. The forced outage rate steadily increases during this phase unless major overhauls or component replacements are instituted. A typical variation in forced outage rate with time through this aging process is shown in Fig. 1.

Traditional roles of the aging plant

As the aging plant becomes less reliable, its role is often changed. Newer, more reliable plants are less costly to maintain and are generally more efficient to handle the base power load. The older plants become auxiliary units or are designated for peaking service. Older plants with higher heat rates, i.e., lower efficiencies, or with low capacity may be retired. Prior to the 1980s, it was assumed that older plants would be torn down to make room for the newer, larger, more efficient units. It was common to retire a plant after 35 to 40 years of service.

This planned obsolescence began to change in the early 1980s. The cost of newer, more efficient plants became more than most boiler operators could readily finance. As a result, new construction was delayed and plans to retire the older plants were put on hold. The need to keep the older units running brought about the new strategy of *life extension*. This is a strategy that delays the plant retirement while maintaining acceptable availability. The strategy requires the replacement of some components to keep the plant running with acceptable forced outage rates and maintenance costs. These replacements or repairs expand upon those traditionally incorporated in a plant maintenance program. Significant capital expenditures are normally required to affect the availability rate. Fig. 2 illustrates the impact of life extension capital on a typical availability curve.

The availability curve drops dramatically after 25 years. Major component failures can cause significant drops in the availability curve due to the resultant long outage times. For example, failures in turbine rotors, steam lines, and steam headers and drums can cause major forced outages. A life extension program that includes capital expenditures to replace this equipment before major forced outages occur can smooth out the availability curve. Higher availabilities usually require higher capital expenditures. The large expenditures needed for high availability in older plants require a strategic plan to yield the best balance of expenditures and availability.

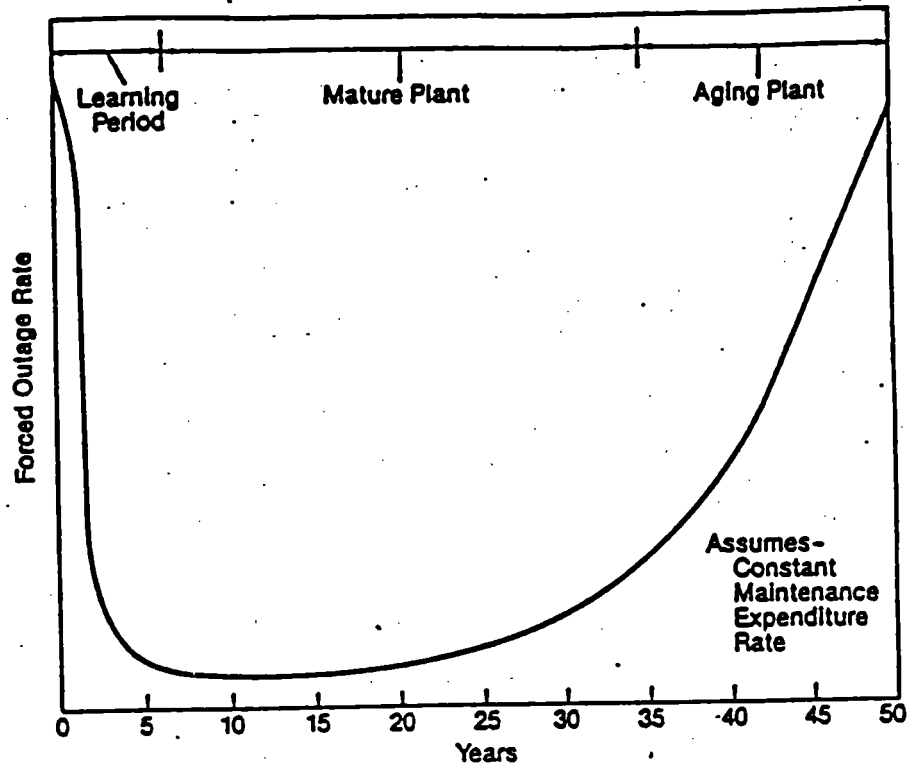


Fig. 1 Theoretical forced outage rate curve with no major action taken.

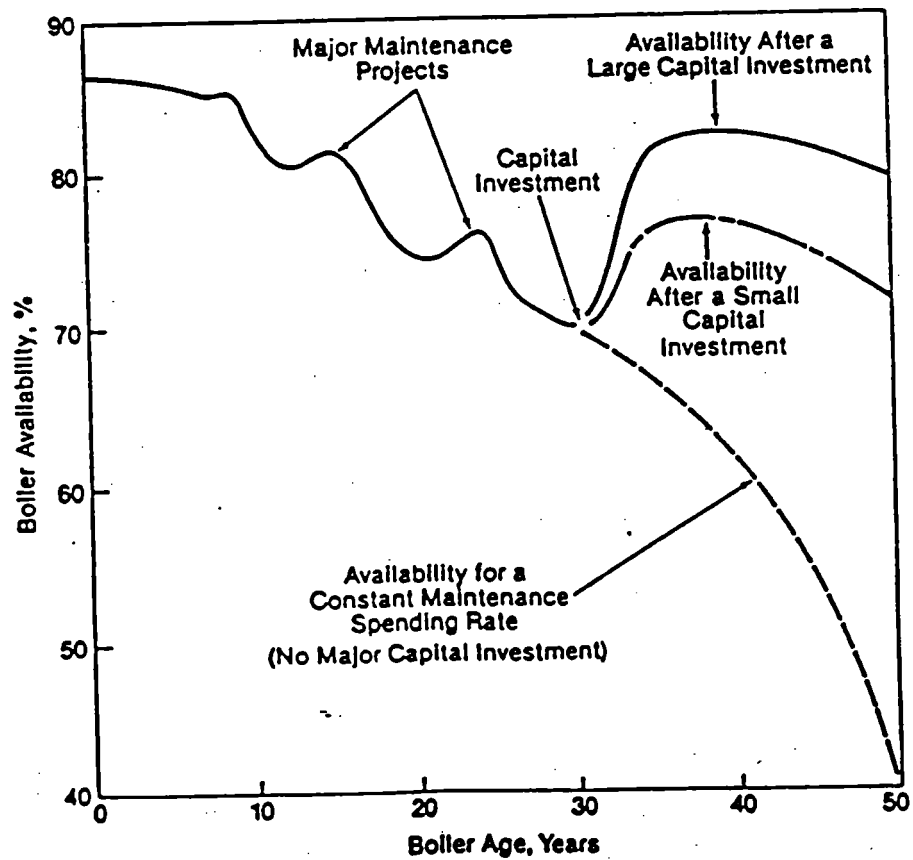


Fig. 2 Typical availability curve for a large, high pressure power boiler with life extension capital expenditures.

Equally important, an optimum maintenance program calls for replacing some parts before they are completely worn out so as to take advantage of scheduled outage time. A cost/benefit analysis is one way to decide when to change critical parts; that is, the cost of the life remaining in the component is weighed against the cost of subsequent loss of production if that equipment is out of service again.

For fast-wearing or particularly vulnerable parts, consider substituting new materials or redesigned parts. Improved materials can prolong life and lead to much less maintenance labor. With higher labor costs, materials once considered too expensive are now cost savers. Even plants that seldom rely on manufacturers' representatives for aid in maintenance should periodically ask the manufacturer about new developments in materials and techniques. For instance, high-nickel material or tungsten-carbide overlays on steel have been most effective in prolonging life of steel parts. Ceramics are used in many applications. Initially these were used only on stationary parts but, with improved epoxies, some can now be used on rotating equipment as well.

Wise maintenance supervisors, then, will investigate new materials or other ways to cut maintenance costs. And they will allot some time for discussions with vendors' salespeople to find out what new products may be a solution to difficult maintenance problems.

BEYOND MAINTENANCE AND REPAIR

Maintenance activities, as they have been addressed in this chapter, fall into three overlapping, not-too-well-defined categories. The first,

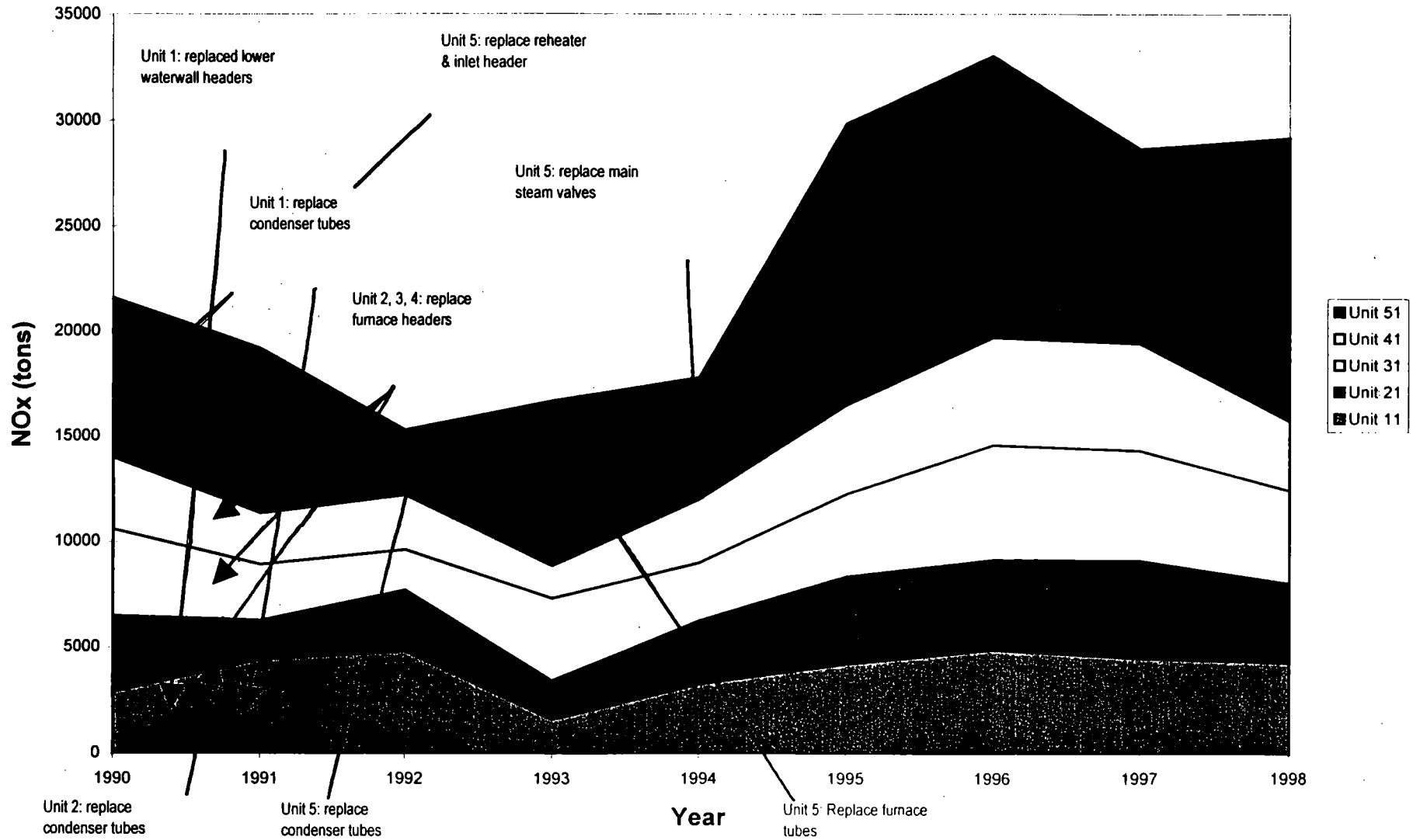
under the general designation of "maintenance and repair", has to do with the day-to-day, month-to-month, and year-to-year actions of inspection, monitoring, and testing (such as of oil or water) to ensure that a steam-generating unit and its auxiliaries will keep running between scheduled annual or bi-annual outages. Strange sounds, visible leaks, higher pressures or temperatures than normal, all tell the alert operator or maintenance person that something has to be done quickly or unit availability will suffer. Unfortunately, this type of maintenance is reactive, but is vital to keeping equipment in service for extended periods of time.

The second type that has been described is anticipatory, or preventive, maintenance—the kind that prevents the strange, noises and other undesirable indications. Based on manufacturers' recommendations, in-plant experience, and seat-of-the-pants judgment, preventive maintenance is done at planned intervals while equipment is operating satisfactorily; its purpose is to eliminate unscheduled outages due to component distress. With this type, the timing is arbitrary and consensual; it is not based on rigorous testing, but on an accumulation of favorable experience.

The third type is now called *predictive maintenance*. This has the same aim as preventive maintenance, but employs more sophisticated computer-assisted methods of timing the actions; it is intended to achieve the same or better results at lower cost.

Maintenance and repair activities beyond these three categories lead us into the realm of life continuation, which is discussed in the next chapter. Major efforts to obtain higher availability and indefinite continuation of equipment life are in the area of upper-management decision-making, beyond the proper activity of the maintenance-engineering staff.

Phil Sporn NOx Emissions





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 9 1999

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Mr. D. Michael Miller
Chief Counsel of Power Generation and Director of Litigation
American Electric Power Service Corporation
1 Riverside Plaza
Columbus, OH 43215

Dear Mr. Miller:

For the past 2 years the Environmental Protection Agency (EPA) has been conducting a series of investigations to determine whether installation of certain components at coal fired power plants is being implemented in a manner that complies with the New Source Review provisions of Parts C and D of Title I of the Clean Air Act (herein "NSR requirements") (42 U.S.C. §§ 7470 - 7503) and the New Source Performance Standards ("NSPS") found at 40 CFR 60.40a. As part of these investigations a number of modifications at facilities owned or operated by American Electric Power Service Corporation (AEP) have been reviewed.

When the Clean Air Act (Act) was passed, Congress exempted existing facilities from many of its requirements. However, Congress also made it quite clear that this exemption would not last forever. As the United States Court of Appeals for the D.C. Circuit explained in Alabama Power v. Costle, 636 F.2d 323 (D.C. Cir. 1979), "the statutory scheme intends to 'grandfather' existing industries; but...this is not to constitute a perpetual immunity from all standards under the PSD program." Rather, the Act requires grandfathered facilities to install modern pollution control devices whenever the unit is proposed to be modified in such a way that its emissions may increase. Given that the majority of coal fired power plants are more than 30 years old, one would have expected that many coal fired utilities would have undergone a modification and installed modern controls in the decades that have passed since enactment of these requirements. Indeed, it appears that there has been quite substantial capital investment in grandfathered coal fired power plants. These projects have enabled electric power generation from coal fired power plants to nearly double since Congress adopted the NSR requirements. However, the operators of these plants did not install the controls mandated by the NSR requirements at the time these modifications were made.

Based on our review to date, it appears that in many instances capital projects involving the replacement of key components have been made without the operator securing either major or minor new source review permits. In internal documents, company officials typically represent that power plant projects will provide for an increase in utilization through reduction in downtime and/or an increase in capacity. In either instance, it appears to us that such projects result in an

increase in emissions, unless offset by the installation of pollution control equipment or other available emission reduction strategies. Coal consumption and emissions data show an increase in emissions at many plants. In some instances, the increase in emissions is over 10,000 tons per year, well above the 40 tons per year increase for NO_x and SO₂ that triggers major NSR requirements. For example, in 1995, at AEP's Philip Sporn plant, annual coal consumption increased by 600,000 tons or more and annual power generation increased by 2 million MWh (see enclosures). Based on documentation you provided to us, we have identified major projects related to the increased generation and coal consumption. We have also identified corresponding emissions increases at the Philip Sporn plant (see enclosures).

The WEPCO rule requires that the source compare projected representative future emissions to past actual emissions (an "actual to projected future actual" test) for evaluating nonexempt modifications. Where the projection is that emissions will not increase by more than the significance level, major NSR requirements are not triggered. However, in such instances the rule requires that documentation of the validity of the source's projection be furnished by submitting actual emission data for 5 years following the change. We are not aware that such documentation has been submitted for any of the modifications identified. Moreover, given that internal documentation for the projects and available emissions data would often suggest otherwise, it does not appear that AEP has routinely projected that its capital projects will not increase emissions by more than the significant amount.

Based on the facts as we currently understand them, we believe that many capital projects, especially "life extension programs," do not fall within the scope of the "demand growth" exclusion found at 40 CFR 51.166(b)(32)(ii) or the "routine maintenance" exemption found at 40 CFR 52.21(b)(2)(iii). Contrary to speculation by some, our view that such projects may trigger NSR and/or NSPS requirements is not based on recent, new interpretations of the law, but on a straightforward reading of the 7th Circuit opinion in Wisconsin Electric Power Company v. EPA, 893 F.2d 901 (7th Cir. 1990), the 1992 WEPCO rule demand growth exclusion, 40 CFR 51.166(b)(21)(v) and the preamble to the WEPCO rule (57 FR 32314, July 21, 1992). The EPA has also spoken clearly on these issues in administrative determinations, including three determinations by the prior administration in the WEPCO matter. All significant EPA determinations respecting these issues are made available to the industry at the time they are made and can now be reviewed by interested members of the public, including industry representatives, via the Internet.

Given the significance of these issues, we are requesting a meeting with representatives of AEP to discuss any statutory or regulatory interpretations that might suggest that these modifications do not trigger applicable NSR or NSPS requirements. We would also like to ascertain whether there are significant broad issues of fact that may be in dispute.

At such a meeting we would be prepared to outline our view of the law and discuss some illustrative fact patterns and would expect your company to identify any differences in understanding of the law or facts of which it is aware. We are not proposing to debate points of

proof or evidence in individual cases. In addition to providing an opportunity for EPA and your company to understand each other's view on legal and technical issues, we would also be prepared to put forth several concepts for resolution of any differences that may be identified and would hope to receive any thoughts AEP may have to offer in this regard. We would hope to engage in a candid exchange of views on the issues rather than a discovery or public relations opportunity for either side. Accordingly, we would hope to reach agreement with AEP that such a meeting would be a confidential settlement discussion subject to Rule 408, Fed. R. Evid.

This letter is not intended to serve as a Notice of Violation under the Clean Air Act, nor is it intended to affect any rights AEP may have to request a conference with EPA officials upon receipt of a Notice of Violation. Please contact me or Virginia Phillips of my office (202-564-6139) if AEP is interested in participating in such a meeting. Because certain key personnel will not be available in August, we would very much like to schedule a meeting in July and suggest either the week of July 19 or the week of July 26, 1999.

Sincerely,

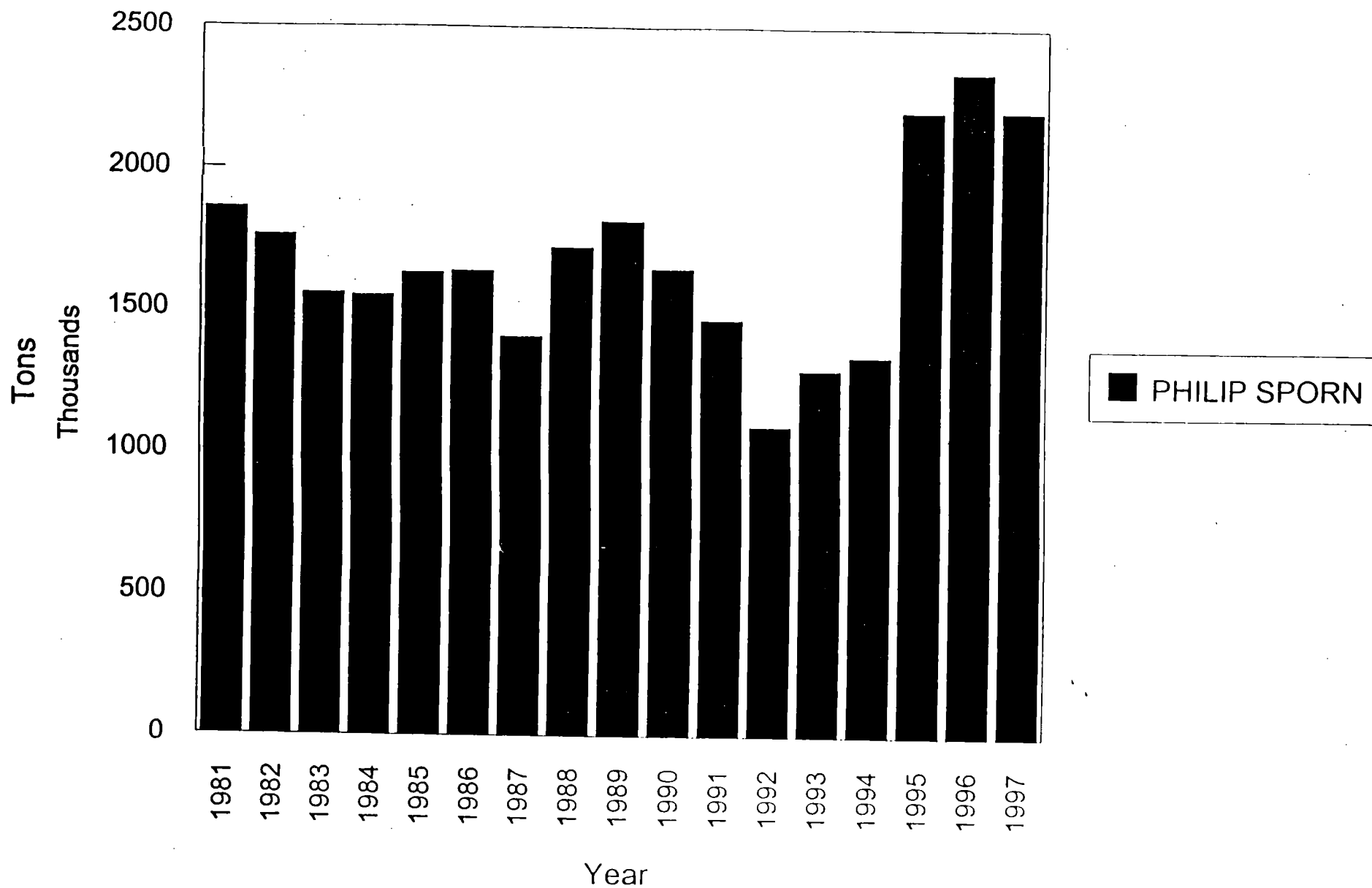
Bruce C. Buckheit

Bruce C. Buckheit, Director
Air Enforcement Division

Enclosures

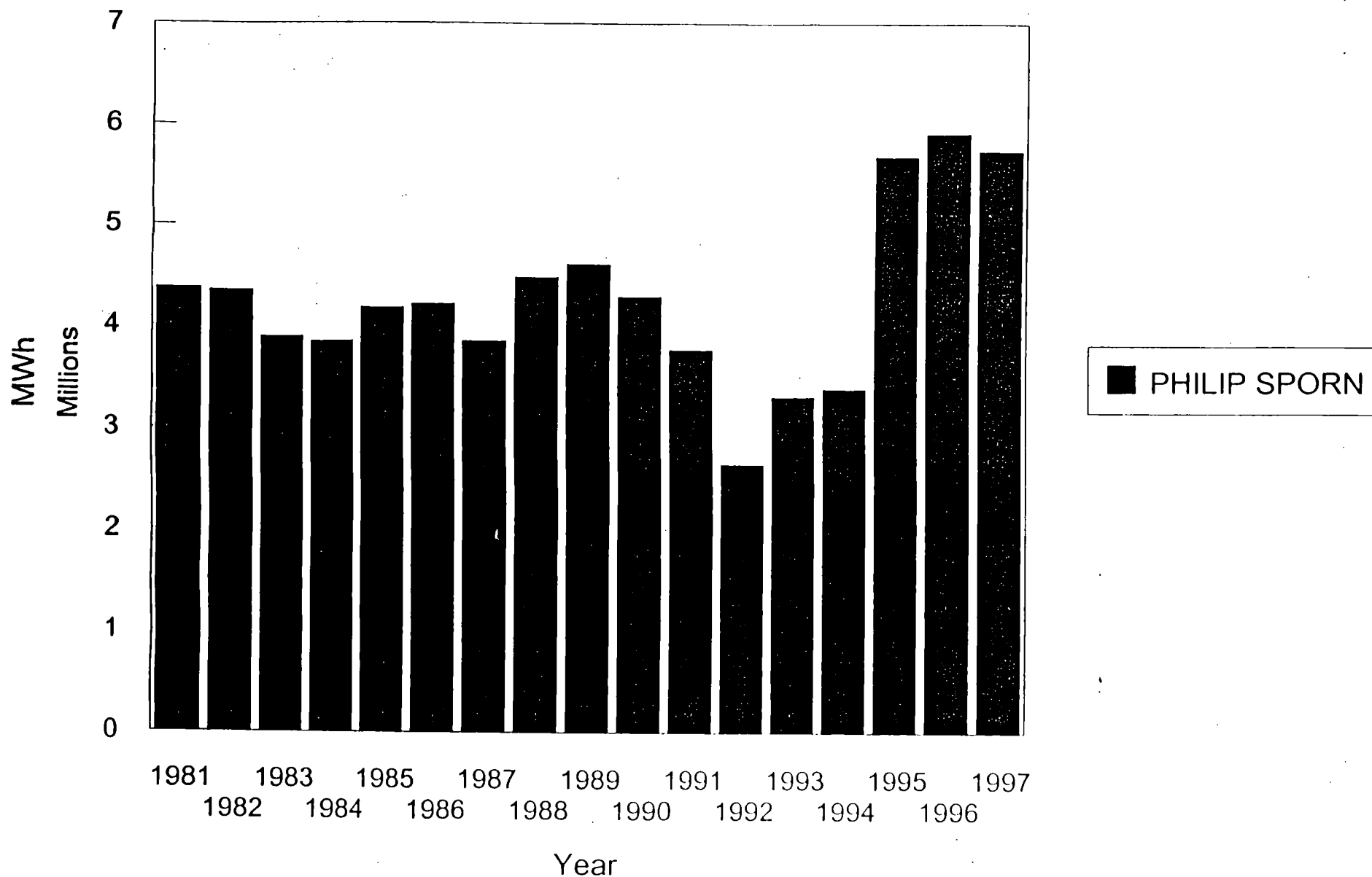
Central Operating Co. - Philip Sporn

Annual Coal Burned

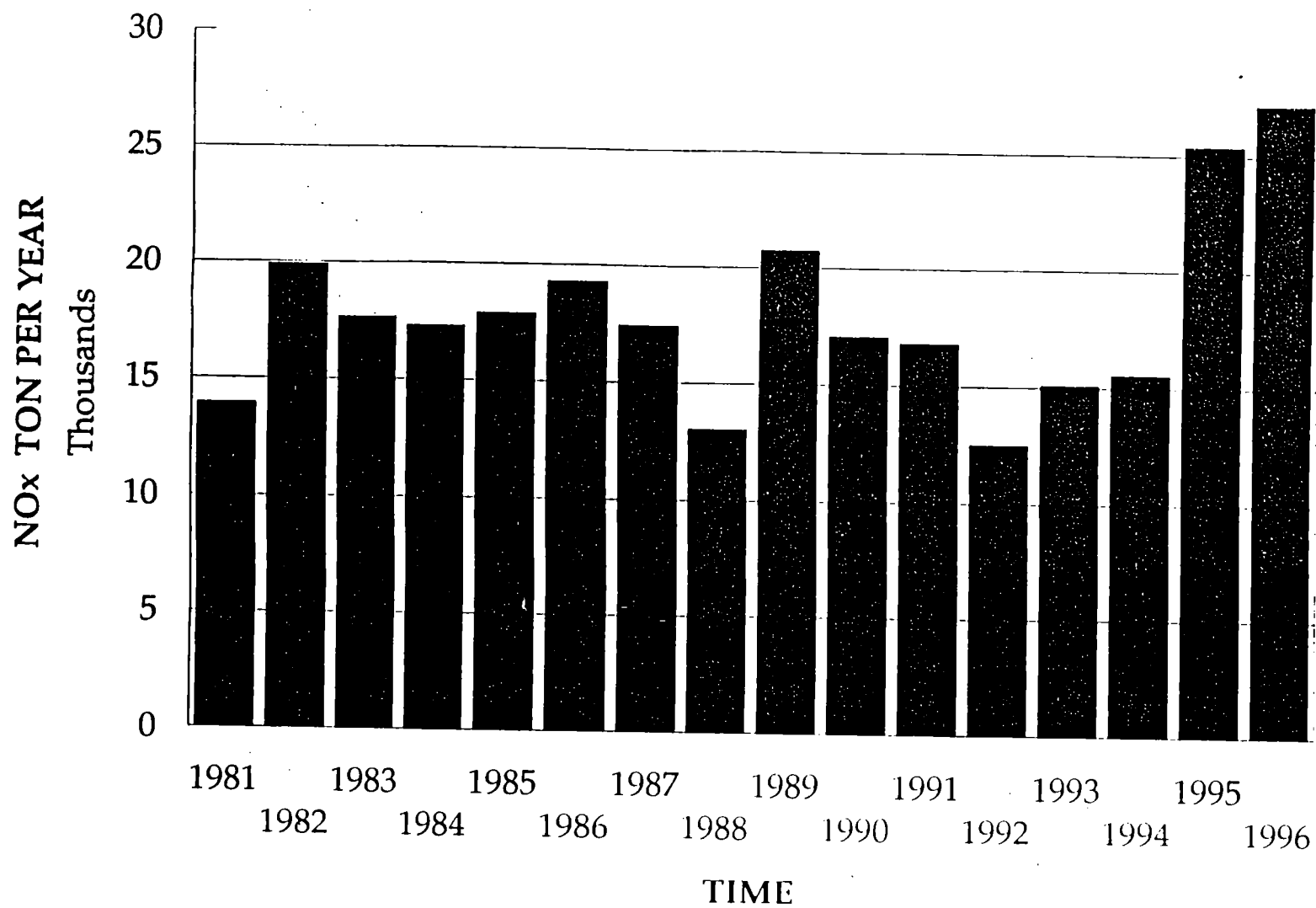


Central Operating Co. - Philip Sporn

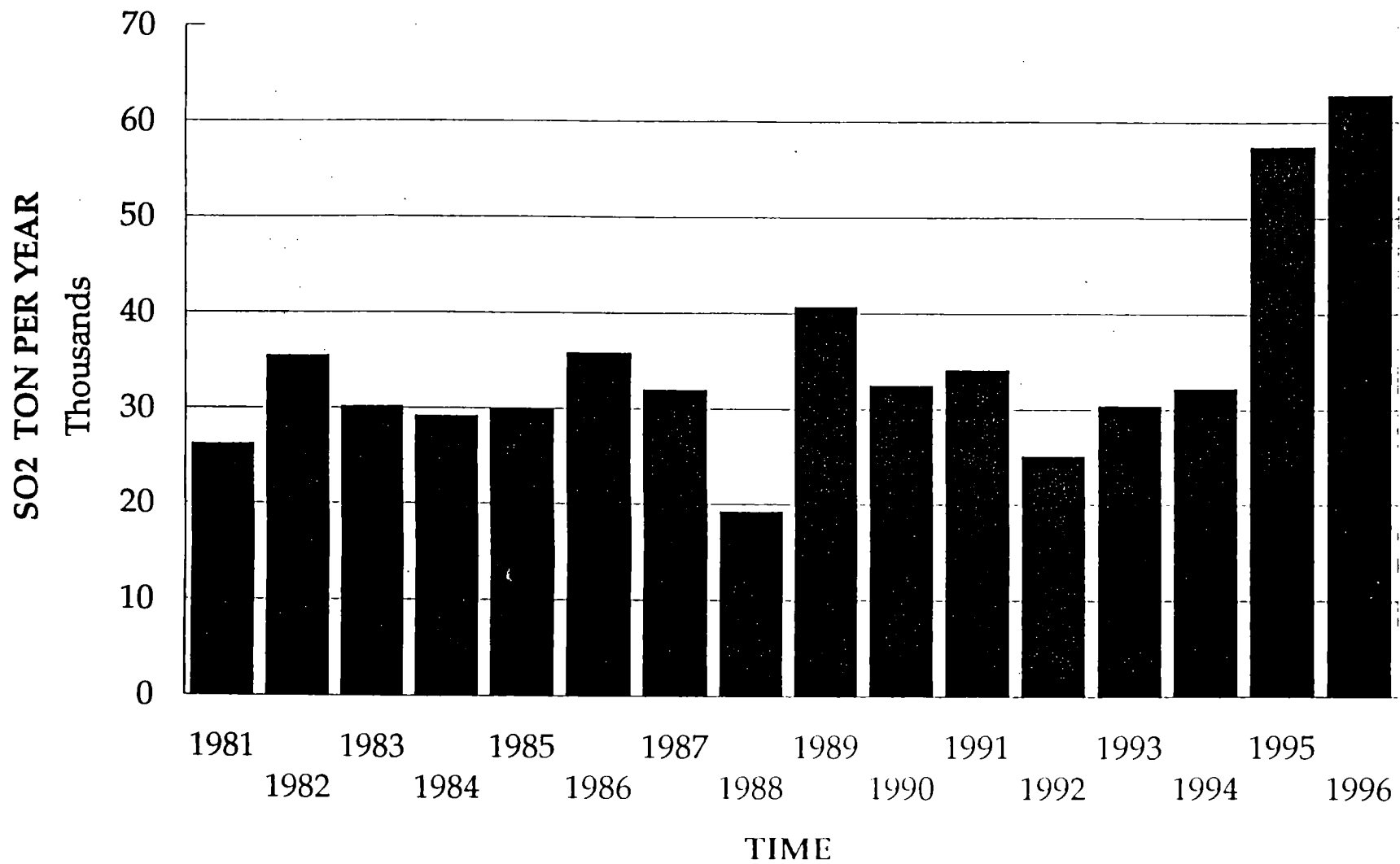
Net Generation



SPORN NO_x EMISSIONS



SPORN SO2 EMISSIONS





a McDermott company

Babcock & Wilcox

Full Capacity Restored to Three Boilers

American Electric Power

Cardinal 1 and 2 • Muskingum 5

Situation

As a result of burning locally available coals, three identical AEP boilers each experienced a loss of generating capacity from 600 MW to 530 MW. This reduction in capacity was due to excessive furnace slagging, flyash erosion of reheater, primary superheater and economizer sections, and poor pulverizer availability. These units started up in the 1960s.

AEP Initiates Complete Redesign

B&W worked closely with AEP's Plant Engineering Division to totally redesign the three existing

boiler units. AEP determined that a complete redesign would be the best evaluated solution. This conclusion was reached after B&W had submitted an engineering study which examined the feasibility of readjusting heating surface areas and the lowering of gas velocities. It was determined that the required boiler improvements could be made during the scheduled outage and would prove cost effective during the remaining life of these units. AEP was committed to solving the existing operational problems and restoring these units to full capacity.

Modifications

AEP's goal was to restore each of these boiler units to full capacity and improve reliability and availability. This would be accomplished by reducing excessive furnace slagging and associated convection pass tube erosion. B&W made the following modifications:

- Upgraded existing pulverizers with five, more reliable, low maintenance B&W MPS pulverizers
- Added 10 pulverized coal burners above the top row of existing burners, on furnace front and rear walls
- Replaced horizontal primary superheater with furnace wingwalls
- Redesigned horizontal reheater by increasing both side and vertical tube spacing

- Eliminated gas recirculation system and substituted excess air to maintain steam temperature at reduced loads
- Rechecked economizer performance

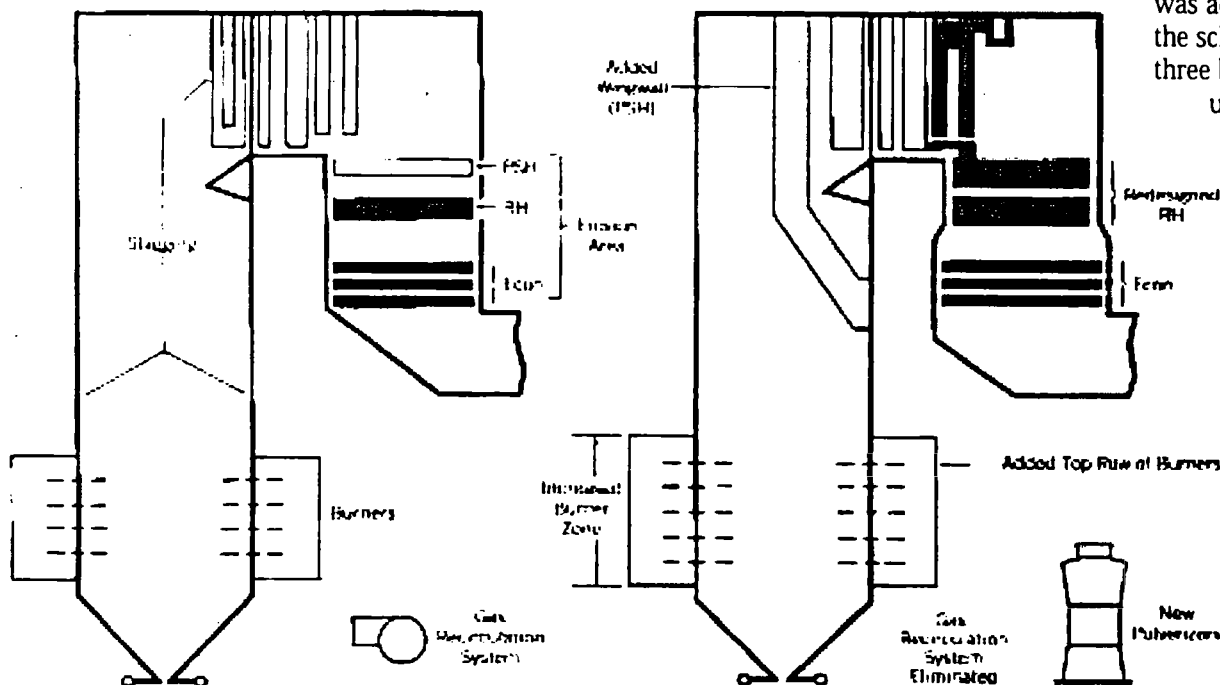
Results

B&W's and AEP's evaluation and upgrade resulted in significant improvements to the three units:

- Restored 70 MW of power to each unit
- Improved availability
- Virtually eliminated furnace and superheater slagging
- Reduced convection pass erosion
- Significantly reduced gas leaks by eliminating the gas recirculation system

The complete retrofit was accomplished within the scheduled outage. The three boiler units were upgraded at a fraction of the time and cost of new construction. B&W's redesign efforts resulted in improved performance, availability and reliability for these three boiler units.

Original Unit (at left) & Upgraded Unit (at right)



Upgraded Superheaters Restore Lost Boiler Capacity

J.R. Pianta
American Electric Power
Columbus, Ohio, U.S.A.

D.A. Huston
Babcock & Wilcox
Barberton, Ohio, U.S.A.

Presented to:
Power-Gen International '97
December 9-11, 1997
Dallas, Texas, U.S.A.

BR-1653

Reasons for Upgrades

American Electric Power (AEP) and Babcock & Wilcox (B&W) have successfully replaced aging power boiler superheaters with upgraded equipment to restore unit capacity. In May 1997, superheater installation in the last of three identical B&W coal-fired units at the Clinch River plant was completed (each unit is 235MW). The success of this large project can be attributed to a cooperative partnership developed to execute the job. Benefits have been realized by AEP in the form of improved unit reliability, restored MW capacity, and lower than estimated costs, while B&W earned additional incentive-driven profit.

Steam generator reliability had been high until the late 1980s when superheater components began to suffer from the latter stages of normal aging processes, including outlet header tube maintenance expenditures and projected major maintenance costs to restore unit reliability. These problems led the customer to forecast the replacement of the primary superheater (PSH), secondary superheater (SSH) and reheat superheater (RSH) in each unit. Replacement, based on anticipated remaining life, was scheduled to occur during six outages (two per unit) between 1995 and 1999.

In conjunction with the problem of aging superheaters, AEP wanted to restore 10 MW of lost capacity for each boiler unit. Subsequent study suggested that an increase in throttle pressure of 70 psig would restore the lost 10 MW. This meant that the boiler steam side pressure drop needed to be reduced by approximately 70 psig. AEP embarked on a plan to determine if the necessary replacement of the superheaters and simultaneous restoration of the 10 MW was feasible and, if so, how it could be accomplished at least cost. Technical solutions were sought from major steam generator manufacturers and costs for

doing the work in one outage versus two outages per unit were compared. The evaluated solution suggested the following plan which was adopted:

- Employ upgraded superheater reheater and primary superheater replacement designs from B&W
- Accomplish the work in one outage per unit versus the six outage plan
- Reduce costs through a partnership contract with B&W that shares risks and rewards

B&W's scope covered both the material supply and field installation. Restart of Units 1, 2, and 3 after completion of construction was smooth with units making full load steam flow and temperature. The expected upgrades in performance, as a result of reduced superheater pressure drop, were realized by allowing a throttle pressure increase of about 70 psig and an 8-10 MW increase in output per unit. For this project, the upgraded boiler components were less costly than replacement-in-kind. Overall costs for this partnered project were less than the original project estimate. New life for older steam generators is possible and practical through application of new ideas and materials.

Description of Units

The three Clinch River units were commissioned in 1959-1961 rated at 235 MW each. Each of the B&W, single reheat, radiant boilers provides 1,600,000 lbs/hr main steam at 1050F and 2203 psig, and 1,263,800 lbs/hr reheat steam at 1050F and 525 psig. Pulverized, low sulfur, eastern bituminous coal is prepared in seven ball and race pulverizers and is fired through fourteen multi-tip roof burners. The configuration of the steam generators is somewhat unusual in that the gas flow through the

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application)
of Ohio Power Company)
for Authority to Amend and)
Increase Certain of Its Rates)
and Charges for Electric Service)

Case No. 94-996-EL-AIR

DIRECT TESTIMONY OF
MYRON D. ADAMS
ON BEHALF OF
OHIO POWER COMPANY

LEGEND

- ___ Management Policies, Practices, and Organization
- ___ Operating Income
- ___ Rate Base
- ___ Allocations
- ___ Rate of Return
- ___ Rates and Tariffs
- X Other

Filed July 20, 1994

11 percent.

GENERATING UNIT LIFETIMES FOR DEPRECIATION

Q. Please discuss, in general, factors relating to the operating lifetime of steam-electric generating units.

A. Most of the major components and subsystems in a steam-electric power plant are subject to considerable thermal and mechanical stress during operation, which results in various forms of deterioration over the unit's operating lifetime. This results in requirements for scheduled maintenance outages and repair of failed components during forced outages on an ongoing basis. As time goes on, the cumulative effects of operation affect more components, and affect those components more severely. Finally, the major subsystems and components reach a stage at which "normal" maintenance and repair become inadequate to support satisfactory continued operation. At that point, the unit may be considered for retirement as an alternative to incurring much higher maintenance expenses, which would probably include significant rebuilding or replacement of some major components.

Q. What factors may affect a utility's decision as to whether to retire a steam-electric generating unit?

A. In most instances, the decision depends on the unit's reliability and relative economics, namely, the capital, operating and maintenance costs to keep the unit in operation, versus the costs of replacing the unit with alternative sources of supply. The need to comply with environmental regulations, as these change over time, is also a major

consideration.

2 Q. What are some of the factors affecting the unit's relative
3 operating cost?

4 A. The major factors are the unit's operability, in terms of
5 availability, equivalent forced outage rates, etc.; its
6 efficiency, in terms of heat rate; its cost of fuel, in terms
7 of cost per MBTU; its ongoing maintenance costs; and its
8 "fixed" operating costs (e.g., payroll costs). These are the
9 components of the plant's aggregate operating (production)
10 cost, which is expressed in mills-per-kilowatt-hour of energy
11 produced. Older units will generally tend to have higher
12 operating costs than newer units.

13 Q. What capital costs must be taken into consideration when
making retirement decisions?

15 A. Unit retirement decisions must take into account capital costs
16 associated with keeping the unit in service (including
17 environmental compliance costs, if any), and the anticipated
18 additional service life achieved thereby, versus the capital
19 cost of adding new replacement capacity.

20 Q. What has been industry experience and standard practice with
21 regard to assumed operating lifetimes of steam-electric
22 generating units?

23 A. Past experience has indicated that, with proper maintenance
24 and operation, coal-fired units can expect to achieve
25 operating lifetimes on the order of 35 - 40 years. Of course,
26 the achievable lifetime is highly unit-specific. Some units
have experienced faster deterioration than others, but, in

general, service lifetimes can be expected to fall in that range.

Q. What factors will influence OPCo's retirement decisions with regard to its steam-electric generating units?

A. OPCo has a number of units which are nearing the end of their "nominal" 35 - 40 year operating lifetime. Factors affecting the decision regarding their continued operation include their current physical condition, as well as those economic factors I mentioned above.

Q. Please discuss recent trends in those economic factors.

A. With regard to production costs (i.e., operability and heat rate), OPCo's older units, from the 150-MW series of generating units on, are of a mature, reliable and efficient design. In the past, a system's oldest generating units were generally less reliable and of less-efficient design than its newest units. For OPCo, the 150-MW (and later) series of subcritical units have maintained good operability at high levels of efficiency, such that improvements in later designs have been less dramatic than in the past. Thus, there would be little to be gained in terms of production cost savings by replacing them with generation from new capacity.

In addition, the production costs of new units include the effects of compliance with stricter environmental standards, which can be substantial. Thus, there is no operating cost advantage to replacing OPCo's older existing coal-fired generating units with generation from new capacity.

Q. Please discuss the capital cost of new base-load, coal-fired

capacity as it relates to the potential retirement of OPCo's older generating units.

2
3 A. The installed cost of new base-load, coal-fired generating
4 capacity has increased dramatically over the last two decades.
5 New generating units require longer permitting and lead times,
6 substantially more environmental control systems and longer
7 construction periods (as a result of which interest accrues
8 for a longer period), etc. Inflation has also been a factor.
9 All of these factors have led to much higher installed costs
10 for new capacity. Today there are much larger differentials
11 between the installed cost of new capacity and older capacity.
12 For example, new coal-fired units are projected to cost at
13 least four times as much as OPCo's current embedded cost of
capacity.

15 Q. What have been the consequences of these changing cost
16 relationships with regard to generating unit lifetimes and
17 retirements?

18 A. Utilities today, including OPCo, have much greater incentives
19 than in the past to keep existing generating units operating
20 as long as possible beyond their nominal lifetimes, even at
21 considerable expense, so as to put off the need for incurring
22 the even greater expense of adding costly new replacement
23 capacity.

24 Q. Do these changing circumstances mean that existing units have
25 longer inherent physical lifetimes than previously assumed?

26 A. No, they do not. The existing units are subject to the same
deteriorative processes as in the past. However, it now makes

1 sense to make larger additional capital expenditures than in
2 the past to correct cumulative deterioration and keep existing
3 units operating. Without those expenditures, the units would
4 continue to deteriorate, and could not operate beyond the
5 traditional lifetimes.

6 Q. Please discuss the concept behind OPCo's life optimization
7 program.

8 A. I have discussed the advantages of retaining existing units in
9 operation. These advantages have been apparent for some time.
10 In addition, "life extension" has become an important
11 attractive supply-side consideration for many utilities in
12 developing integrated resource plans, and has been encouraged
13 by many state regulatory commissions. Accordingly, programs
14 have been developed by AEP to attempt to achieve longer
15 operating lifetimes, and to do so as economically as possible.
16 (I use the word "attempt" since very few steam generating
17 units in the U.S. have had operating experience beyond 40
18 years of service.) AEP's life optimization programs are
19 implemented over a number of years, commencing several years
20 prior to the end of a unit's "traditional" lifetime. The work
21 is planned over this long period, so as to minimize its total
22 cost, and the outage time required.

23 Q. Please discuss the generating unit lifetime assumptions used
24 in this filing for OPCo's steam-electric generating units.

25 A. The lifetime assumptions for OPCo's generating units are
26 indicated on Exhibit No. ____ (MDA-14). The lifetimes indicated
for OPCo's older generating units (Kammer Units 1-3; Sporn

Units 2, 4, and 5; Cardinal 1; and Muskingum River 1-5) reflect the implementation of lifetime optimization programs. The formulation of these programs involved careful assessments of each unit's physical condition (after several decades of operation), which led to the identification of specific capital and maintenance items that must be undertaken if the unit is to operate beyond 40 years.

The Company has had in place for a number of years a 50-year service life program for a number of units. This program includes the major capital replacements required to operate each unit for a total period of 50 years. Those capital replacements are included in the Company's Other Production Capital Forecast. As a result of this program, it is anticipated that the units will achieve 50 years of service. For several of those units, it is believed that, with additional measures, lifetimes of 60 years might be achieved, and a 60-year life optimization program has commenced. However, in all cases, the achievement of lifetimes in excess of 40 years is directly dependant on carrying out the life optimization program; such lifetimes simply could not be achieved without the unit modernization program, and without incurring the program's considerable capital cost.

For the depreciation study sponsored by Witness Henderson, it is assumed that the 50-year life optimization programs developed for Kammer 1-3, Muskingum River 1-4, and Sporn 5, and the 60-year life optimization programs developed for Cardinal 1, Sporn 2 & 4, and Muskingum River 5, will be

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application	)	
of Ohio Power Company	)	
for Authority to Amend and	)	
Increase Certain of Its Rates	)	Case No. 94-996-EL-AIR
and Charges for Electric Service	)	

SUPPLEMENTAL TESTIMONY OF
MYRON D. ADAMS
ON BEHALF OF
OHIO POWER COMPANY

LEGEND

___	Management Policies, Practices, and Organization
<u>X</u>	Operating Income
<u>X</u>	Rate Base
___	Allocations
___	Rate of Return
___	Rates and Tariffs
___	Other

Filed January 9, 1995

1 Q. What issue will you address regarding generating unit
2 lifetimes to use for depreciation purposes?

3 A. I will address the fundamental linkage between the results of
4 the Company's generating unit life-optimization programs,
5 namely, longer service lives, and the capital expenditures
6 required for those programs.

7 Q. Do you agree with the Staff's approach regarding the Company's
8 life optimization programs in its depreciation calculations?

9 A. No. I strongly disagree with the Staff's using the Company-
10 recommended extended generating unit lifetimes for its
11 depreciation calculations, while rejecting recovery of the
12 capital expenditures required to achieve those extended
13 lifetimes. This is fundamentally inconsistent, since extended
14 generating unit lifetimes cannot be achieved without those
15 capital expenditures. The Staff's approach violates the basic
16 rate design principle of matching benefits with expenditures.
17 I will suggest two alternative approaches to rectify this
18 major inconsistency in the Staff Report.

19 Q. Please describe the Company's generating unit life-
20 optimization programs.

21 A. The Company has recognized for some years the benefits of
22 extending or optimizing the lifetimes of several of its older
23 coal-fired generating units (Kammer Units 1-3; Sporn Units 2,
24 4, and 5; Cardinal Unit 1; and Muskingum River Units 1-5), and
25 has developed and begun to implement life-optimization
26 programs to accomplish that objective. The life-optimization

SUPPLEMENTAL TESTIMONY OF M. D. ADAMS

1 programs extend over several years, and require significant
2 capital expenditures during those years. Without those
3 expenditures, the units' lives could not be extended, and they
4 would most likely achieve more traditional lifetimes, on the
5 order of 35 - 40 years. As a direct result of the life-
6 optimization program, the Company expects those units to
7 achieve, instead, lifetimes on the order of 50 years for
8 certain of those units and of 60 years for others, as
9 indicated on Exhibit No. ____ (MDA-14) of my direct testimony.
10 Those were the lifetimes which were used by both the Company
11 and Staff in their depreciation calculations.

12 However, it must be recognized that the achievement of
13 those lifetimes represents the future outcome of programs
14 involving future actions, namely, the commitment of the
15 substantial capital expenditures required. These two factors
16 -- the capital expenditures and the longer lifetimes -- are
17 inseparable, and their treatment must be consistent. Either
18 both must be recognized, or both ignored.

19 Q. What is the problem with the Staff's approach?

20 A. On the one hand, the Staff conveys benefits to today's
21 ratepayers based on future Company actions, by utilizing the
22 extended lifetimes included in the Company's filing; yet on
23 the other hand, the Staff rejects recovery from today's
24 ratepayers of the capital expenditures required to achieve
25 those benefits.

6 Following such an approach, today's ratepayers will

Voluntary Reporting of Greenhouse Gases

1/26/00
13:23:18

Schedule II. Project-Level Emissions and Reductions

Section 1. Electricity Generation, Transmission, and Distribution

Entity ID: 313282555
Status: Validated and Accepted

Reporting Year: 1997

American Electric Power, Inc.

Heat Rate Improvement Projects (Oper. and Equip. Changes)

Part II. Specific Project Information

1. Project Type:

Heat rate or other efficiency improvement

2. Project Scale:

Full-Scale/Commercial

3. Total Fuel/Energy Consumption:

Fuel/Energy Type	Unit of Measure	1997	1998	1999	2000
Natural Gas(Pipeline)	million standard cubic feet		941	0	0
Subbituminous	thousand short tons	10694	10563	10100	10151
Bituminous	thousand short tons	37415	37407	41825	43995

4. Changes in Total Fuel/Energy Consumption Due to Project:

Fuel/Energy Type	Unit of Measure	1997	1998	1999	2000
Bituminous	thousand short tons	-131	-189	-280	-357
Subbituminous	thousand short tons	-12	-59	-100	-120
Natural Gas(Pipeline)	million standard cubic feet		-4	0	0

5. Generating Units Included in this Project:

Operating Unit	Plant Name	Generating Unit	Capacity (MW)
AEP	see next page	n/a	21,475.00

6. Project Description:

This project includes heat rate improvement activities (projects and operational changes) at AEP-operated coal-fired power plants. Routine maintenance and other activities that only restore heat rate back to original values are not included.

The AEP owned and operated plants included in this project are as follows: Amos, Big Sandy, Cardinal, Clinch River, Conesville, Glen Lyn, Gavin, Kammer, Kanawha River, Mitchell, Muskingum River, Mountaineer, Picway, Rockport, Sporn, and Tanners Creek.

Voluntary Reporting of Greenhouse Gases

1/26/00
 13:23:18

Schedule II. Project-Level Emissions and Reductions

Section 1. Electricity Generation, Transmission, and Distribution

Entity ID: 313282555
 Validated and Accepted

Reporting Year: 1997

American Electric Power, Inc.

Heat Rate Improvement Projects (Oper. and Equip. Changes)

Part III. Greenhouse Gas Emissions and Reductions

Gas	Type	Unit of Measure	1994	1995	1996	1997	Accuracy	Emission Reductions in Future Years	
			Physical Quantity	Physical Quantity	Physical Quantity	Physical Quantity		Annual Average	Number of Years
Emissions									
Carbon Dioxide	Direct	thousand short tons	111988	111780	121736	127170	High		
Reductions									
Carbon Dioxide	Direct	thousand short tons	360	590	878	1101	Moderate	1,359.0	52



Bdkar@aol.com
12/29/99 11:56:59 AM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP
cc:
Subject: Fwd: from Doniger -- electricity memo

Here's the Doniger stuff.

Return-path: <ljorgenson@econet.org>
Received: from rly-zc05.mx.aol.com (rly-zc05.mail.aol.com [172.31.33.5]) by air-zc03.mail.aol.com (v67.7) with ESMTP; Tue, 28 Dec 1999 10:06:45 -0500
Received: from smtp10.atl.mindspring.net (smtp10.atl.mindspring.net [207.69.200.246]) by rly-zc05.mx.aol.com (v67.7) with ESMTP; Tue, 28 Dec 1999 10:06:41 -0500
Received: from econet.org (user-2iveoge.dialup.mindspring.com [165.247.98.14]) by smtp10.atl.mindspring.net (8.9.3/8.8.5) with ESMTP id KAA08718; Tue, 28 Dec 1999 10:06:33 -0500 (EST)
Date: Tue, 28 Dec 1999 10:06:41 -0500
From: "J. Lisa Jorgenson" <ljorgenson@econet.org>
Subject: from Doniger -- electricity memo
To: BDKAR@AOL.COM
Cc: doniger.david@epa.gov
Reply-to: ljorgenson@econet.org
Message-id: <3868D201.F6616223@econet.org>
MIME-version: 1.0
X-Mailer: Mozilla 4.04 [en] (Win95; U)
Content-type: multipart/mixed; boundary="Boundary_(ID_oFqINqhXScsGuY5layFuRA)"

Here is the text of the attachment, in case you can't read it.

Political considerations

1. Support/Opposition to Integrated Electric Sector Plan. Strong support for such a plan would be expected from environmental organizations (who have made a priority of utilities and vehicles) and northeastern congressional delegations and governors (who have sponsored or supported similar legislation). Support would also be expected from electric power producers that are already relatively low-emitting and feel disadvantaged by higher-emitting competitors. Opposition would be expected from midwestern and southern delegations and governors, from certain electric power producers that are heavily dependent on coal, and from the coal industry and the United Mineworkers.

The picture among coal-dependent utilities, however, would not be uniform. A significant fraction such firms would be attracted to the market-based and reform elements of the plan (cap- and-trade architecture, suspension of new source review, 15-year regulatory stability), although put off by the proposed emissions targets. Most of these firms believe they face significant additional requirements for some or all of these pollutants over the next decade, including carbon. Some of these firms are already engaged in quiet exploration of integrated approaches with EPA and with elements of the environmental community, although without agreement to this point. Rather than support such a proposal, however, many such firms can be expected to register opposition and wait for the outcome of the next election. Nonetheless, some of them may be induced to respond in measured terms, which could affect the stringency of opposition from midwestern and southern officials as well.

Reactions of other constituencies could also be affected by elements of the plan. For example, mineworker representatives have said any acceptable plan must "make them whole." A portion of the value of the pollution allowances could be dedicated to worker adjustment or compensation. (This could be done by allocating some of the allowances to the mineworkers, or by so dedicating the a portion of revenue raised through an allowance auction.) Such a proposal could affect the reaction of key Members of Congress (e.g., Senator Byrd). Similar approaches could be used to meet concerns about displaced communities, or even to address other sectors that face financial consequences (e.g., by allocating allowances or auction revenues to the electric power firms or coal firms).

2. Inclusion of Carbon Dioxide. It could be suggested that an Administration proposal should be limited to conventional Clean Air Act air pollutants (SO₂, NO_x, and perhaps mercury) and exclude CO₂. In order to have support from environmental constituencies, however, an integrated electric sector plan would have to cover all four air pollutants, including CO₂. In addition, a plan that excluded CO₂ could not meet its goal of establishing a stable 15-year regulatory environment for electricity firms' environmental planning decisions, because potential requirements for CO₂ are the most important factor affecting those decisions. Thus, it must be decided how such a plan would fit within the Administration's approach to global warming.

The main issue is whether advancing a plan that includes carbon dioxide would advance or set back the Administration's domestic and international objectives for addressing global warming. It appears that advancing such a plan could actually set those objectives back only if the plan were decisively rejected by the next Congress, or perhaps if it served to catalyze a new anti-Kyoto resolution. Including CO₂ would be denounced by hard-line opponents of the Kyoto Protocol as "premature implementation." (Note that the charge could not be "back-door" implementation, as this would be a proposal for legislation, not regulatory action.) Whether this cause is taken up by Senators and Congressmen more identified with the middle may depend on specifics of the plan (i.e., whether it includes a worker adjustment element). So

long as the plan is not decisively rejected (e.g., if it was merely the subject of inconclusive hearings), it would serve as a positive marker of intentions after the 2000 election.

Such a proposal probably would help our international bargaining position in the post- Kyoto negotiations set to culminate in late November 2000. A plan to address a major 40% of US CO₂ emissions would help show other nations that the Executive Branch is serious in its intentions to address domestic emissions and to press the Congress for ratification of Kyoto if acceptable agreements can be reached in those negotiations. The reverse would obviously be true if the plan were decisively defeated in Congress earlier in the year.

notes on other points:

Charge of inconsistency with 1997 3-stage plan. General agreement that the key point is that the CO₂ proposal is consistent with the timing envisioned in Stage 3 ? mandatory CO₂ cap-and-trade limits starting in 2008. Technical inconsistency with Stage 2 ? notion that proposals for the third stage wouldn't be made to later. Agreement that offering the industry more leadtime/wrapping up all its obligations in an integrated package are workable answers to this criticism. Not sure this needs to be in the memo.

Economy-Wide vs. Electric Sector. Agreement that the goal is to cover all important sectors by 2008, if all comes together. So it is not anyone's proposal to do just the electric sector by then. There are two issues: (1) Is it politically preferable to take on one sector at a time starting with electricity now ("divide and conquer"), or to take them all on at once later? (2) Would a sector- by-sector approach (even if more feasible politically) introduce sufficiently compelling economic inefficiencies?

The divide-and-conquer vs. take-on-all-sectors issue probably needs little elaboration in this memo. The policy issue, however, needs some points. This is my best shot at points I think Bob, Joe, and Mark would find acceptable:

? Electric sector is the one sector that could be pulled out of an economy-wide plan with the minimum of prejudice to choices on how to address other sectors (e.g., upstream v. downstream).

? While downstream systems add greater monitoring and trading-transaction costs, most electric sector sources already monitor downstream for CO₂, and most electric firms are already familiar with downstream cap-and-trade (because they already do SO₂, NO_x) and expect any CO₂ system to be run at the same level. (An upstream approach to CO₂ for electricity would leave that sector subject to both approaches.)

? Downstream system for electricity does not necessarily prejudice the systems for other sectors.

? As long as each sector in the end gets (by allocation or auction) a standardized allowance worth 1 ton carbon-equivalent, then trading can

equalize marginal costs across sectors.

? Attention would have to be paid to some complex "boundary" issues (e.g., how to treat combined heat and power sources and other small, distributed electric generators).

On levels and costs. The proposal would generally reflect the high end of levels represented in current bills. (Exception is CO₂, where the proposal would be effectively more lenient than the most lenient of the current bills, because it would allow domestic offsets outside the electric power sector.)

General agreement that a credible proposal must reduce emissions to these levels. Environmental support will not be there for less.

Utilities, while not supportive of such levels, would not expect an Administration bill that starts weaker than those levels. Agreement also that the proposal need not and should not go near the low-end of levels in of current bills (e.g., 0 tons mercury, or -7% CO₂ domestic only).

General agreement that the memo does not have to address marginal cost-benefit ratios.

On costs, in addition to showing total cost of package, memo should compare it to cost of command-and-control/piecemeal regulation. Memo should include information on electricity prices (cents/kilowatt) and coal consumption, including regional information. IPM model can provide such information.

We will try to provide more information on assumptions regarding CO₂ offsets next week too.



- notes.wpd

Statement of Administration Principles

1. Flexibility with tough requirements
2. Reductions made with economic efficiency
3. Set environmental goal, not dictate method
4. Local ambient air quality not impacted
5. Multi-pollutant benefits / not contradictory to multi-pollutant reductions
6. Encourage energy efficiency

— fuel switching
— modernization
— shutdown old plants

Administration policy has consistently embraced the concept of market-based implementation of ambitious reduction goals. The current CAA framework can make these principles difficult to achieve simultaneously. This requires creative problem solving as the Administration works to address serious public health and environmental concerns in a manner consistent with a strong economy and in a time frame that provides needed results. The alternative is a huge loss for our side and a future of litigation with long-delayed meaningful emission reductions that deliver improvements in a cost-effective manner. This opportunity for creativity is also no-risk because if an agreement cannot be negotiated, litigation remains an option.

At a meeting between Enforcement and utilities on 22 September, Enforcement announced its plans for settlement required best available control technology (BACT) or lowest achievable emission rate (LAER) for every unit in the companies' systems within ten years. Utilities deemed the Enforcement proposal unacceptable and on 8 October, proposed a counter offer to make reductions (not as low) between 2017 and 2025. Enforcement rejected the utility proposal and informed the group of utilities that notices of violation (NOVs) would be forthcoming. Negotiations are at an impasse. Complaints and NOVs were issued 3 November.

Policy priorities for settlement

1. Substantial reductions in SO₂ and NO_x
2. Allow reductions to occur in economically efficient manner (consistent with NAAQS)
3. Don't take actions that make CO₂ emissions worse *discourage efficiency*
4. Offer certainty (limited NSR) in exchange for substantial reductions
5. Remedy should deliver real environmental improvements – concern with SO₂
6. Don't take actions that encourage companies to resist action on climate change
7. Consider settlement as first step toward new regulatory framework (eliminate grandfathering)

For a given level of investment, improvements can be made at plants that provide more reductions as well as reductions in pollutants other than SO₂ and NO_x by allowing flexibility as to where and how the reductions will be made. This is possible because units operate at different capacities (technology on a unit that runs more will eliminate more tons), certain technologies cannot be retrofit onto some units, and (if properly structured) it allows for fuel switching or CHP as compliance mechanisms to reduce CO₂ in addition to SO₂ and NO_x.

The WHCCTF does not want to see BACT/LAER driven scrubbers and SCR installations on **every** unit for two reasons. First, the addition of scrubber technology adds an efficiency penalty of ~4% that is also an equal CO₂ increase. Further, there will be no net SO₂ reductions achieved thru a settlement that requires scrubbers because the units will continue to receive the SO₂ allowances granted them under the 1990 CAA amendments – net SO₂ emissions will remain at 8.9 million tons per year. Second, by forcing these technologies on all units, the companies are wedded to those investments at least until their capital is recovered thru the sale of electricity (12 to 15 years) – forcing them to take a strong delay position with respect to action on climate change. EPA's own analysis of future emission reduction scenarios (April '99) demonstrates that reductions in CO₂ provide reductions in NO_x and Hg (to reduce SO₂, the cap must be lowered), but the inverse is not true.

The goal should be to set environmental standards, provide a period of regulatory certainty and let companies determine the most economically efficient manner to achieve it. Companies have indicated a willingness to make CO₂ reductions along with NO_x and SO₂. Many of them believe CO₂ constraints are in their future and want to make smart decisions. Realistically, the CO₂ reductions to be gained now will not be large, but it will be a down payment plus acknowledgement by a big sector that climate change is a real issue and the time for initial action has arrived. (Further, the Administration's CEA's economic analysis doesn't show the utility sector making large reductions because their "compliance" in the short and medium term will mostly come thru flexibility mechanisms.)

The Administration would gain greater environmental benefits at a lower cost by stating a reduction goal in terms of a system emission rate (surrender of allowances for SO₂) and, importantly, actually achieve these benefits instead of litigating on their behalf. This is the basis of what an "off-ramp" from NSR rules for utilities would look like; EPA's Office of Air and Radiation is pursuing such an "off-ramp" as part of NSR reform.

Background on utility NSR/enforcement

While the EPA Office of Air and Radiation (Air Office) is drafting a new rule on New Source Review (NSR) reform (see below), the EPA Office of Enforcement and Compliance Assurance (Enforcement) is undertaking a major enforcement effort with utilities on whether NSR rules have been violated. The existing NSR rule is supposed to ensure that when a power plant unit makes changes to upgrade its performance, it is required to install the latest control technology. At issue are the definitions of routine maintenance/changes to existing units and how to determine whether there has been an emission increase caused by the maintenance/changes. Industry believes Enforcement has unofficially adopted new definitions for its investigative purposes to interpret NSR. Eight companies are current targets of this effort. These new definitions are also the subject of contentious and unresolved debate between industry and the Air Office in the rulemaking on NSR reform.

At a meeting between Enforcement and utilities on 22 September, Enforcement announced its plans for settlement required best available control technology (BACT) or lowest achievable emission rate (LAER) for every unit within ten years. Utilities deemed the Enforcement proposal unacceptable and on 8 October, proposed a counter offer to make reductions (not quite as low) between 2017 and 2025. Enforcement rejected the utility proposal and informed the group of utilities that notices of violation (NOVs) would be forthcoming. Negotiations are at an impasse.

After roughly three years of reform efforts and draft rulemakings, the Air Office wants to finalize the current NSR draft by creating an option that would offer companies flexibility (exemption from NSR except new and reconstructed units) in exchange for substantial emissions reductions in a short time frame. This idea was first raised at a July 1998 WH meeting with utility CEOs and Vice President Gore on climate change. At that meeting, the companies highlighted that air quality regulations weren't integrated and presented a barrier to making efficiency improvements (from CHP to smaller projects) to lower the rate of emissions of CO₂ as well as criteria pollutants. The VP directed Bob Perciasepe to work on this issue.

The challenge is to find a way to develop a prospective rule that recognizes these issues and provides a way for companies to make real improvements to public health and the environment and provides a settlement option for the current Enforcement action. The alternative is a huge loss for our side and a future of litigation with long-delayed meaningful emission reductions and failure to promulgate environmental regulations that deliver improvements in a cost-effective manner. This opportunity is also no-risk because if an agreement cannot be negotiated, Enforcement remains unencumbered to pursue its initiative.

Talking points for meeting on Administration settlement policy/priorities

- **Allow settlement to have flexibility in where/how reductions are made**
- The worst scenario is mandatory scrubbers and NO_x removal technology; this command and control style regulation takes no advantage of efficiency or fuel switching and weds the companies to the plants where technology is added for another 12-15 years.
- Added scrubbers incur an ~4% efficiency loss (CO₂ gain)
- The Agency's analysis (April '99) of combined reduction strategies indicates that a CO₂ and SO₂ reduction plan also delivers substantial reductions in NO_x (~20%) and Hg (~30%). While a CO₂ reduction plan cannot be considered here, strategies that include those that reduce CO₂ should be considered because they allow companies (and the nation's emissions) to make a down payment on a CO₂ constrained future.
- Some companies are considering reduction strategies (outside of an enforcement action) that include reductions of CO₂; these strategies also reduce NO_x and Hg should be included in the menu of options for settlement.
- Government should be able to accept **where** flexibility in reductions because compliance with local NAAQS is not an issue with these enforcement actions (concern is downwind O₃ formation, not NO_x emissions at a stack)
- Actual reductions in SO₂ must be addressed thru a reduction in SO₂ allowances; need to consider that mandating scrubbers will not reduce net SO₂ emissions – emissions will occur elsewhere up to the cap's limit; how should NSR work when an emissions cap exists.

?

December 6, 1999

TO: Angie Mazeur, White House Environmental Initiatives, fax 456-1736
David Gardiner, White House Climate Change Task Force, fax 395-2342

FROM: Larry Mansueti, Director, Climate Challenge, DOE, 586-2588

SUBJECT: Coal Plant Age vs. Unit Characteristics

Per David Gardiner's phone call to me this morning requesting verification of "70% of coal plants are 30 years or older", below is a table that I constructed from data runs made by my contractor Sentech, Inc. (Bethesda, MD). The runs are from EPA's E-GRID database on the power industry and consists of data for 1996. "Age" is defined as of January 1, 2000.

In short, David's recollection is correct that "70% of coal plants are 30 years or older" -- the table shows 71%. Though note per common sense that the older plants are run less and account for proportionately less emissions. Still some large numbers however.

Percentages for SO₂ and NO_x emissions by age are also shown. Attached is the raw data on which the table was derived.

UNIT CHARACTERISTIC	25 YEARS AND OLDER	30 YEARS AND OLDER	40 YEARS AND OLDER
% of total number of coal units (ie. boilers and generators)	81%	71%	46%
% of total electric utility coal capacity	62	45	22
% of total electric production in MWh	54	36	16
% of total electric utility CO ₂ emissions	60	41	18
% of total electric utility SO ₂ emissions	77	56	26
% of total electric utility NO _x emissions	72	47	20

FROM : SENTECH, INC.

FAX NO. :

Dec. 06 1999 03:41PM P2

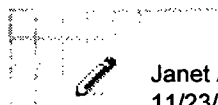
Corrected Data (Outliers removed)

	Total	Unit Age (yrs from 2000)		
		>=25	>=30	>=40
Capacity (MW)	293,845	181,997	130,907	65,049
Generation (MWh)	1,661,049,023	896,999,017	605,926,858	270,739,921
CO2	1,575,758,612	947,653,219	640,444,485	278,822,976
SO2	9,705,619	7,426,187	5,399,585	2,517,576
NOx	4,422,750	3,182,735	2,094,457	868,101

		Unit Age (yrs from 2000)		
		>=25	>=30	>=40
% Capacity (MW)	100%	82%	45%	22%
% Generation (MWh)	100%	54%	36%	16%
% CO2	100%	60%	41%	18%
% SO2	100%	77%	56%	26%
% NOx	100%	72%	47%	20%

Units		Unit Age (yrs from 2000)		
		25+	30+	40+
	916	739	647	418
	100%	81%	71%	46%

Note: EGRID has 1,162 coal units (boilers/generators) in the EGRID data base. Data set used for this analysis reduced to 916 units from EGRID due to apparent errors in the data base.



Janet Anderson
11/23/99 12:54:05 PM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP
cc: Angela C. Mizeur/WHO/EOP@EOP
Subject: info for mtg

- Current utility emissions of NOx are 5.9 M tons/yr; because of reductions from phase II acid rain provisions, emissions are forecast to be 4 M tons/yr in 2005 (no NOx SIP call in this) and remain flat thru 2010.
- The \$3 B EPA plan I referenced yesterday (50% SO2, 10% CO2) also includes 15-20% NOx reduction.
- Consider a 1000 MW base load coal unit; it currently emits about 15k tons NOx/yr and 6.6 Mtons CO2/yr. To replace it with natural gas combined cycle would require \$400 M in capital construction. The differential operating cost is about 1.2 cents/kWhr (assuming there would be no cost to retire the coal plant - highly optimistic); this would mean additional operating costs of about \$80 M/yr and would result in NOx emissions of 5k tons/yr and CO2 emissions of 3 Mtons/yr. My guess is the operating penalty would more likely be 1.5 to 2x higher than I've guessed here -- but you can see the simultaneous improvement in NOx and CO2.

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What's the word on health?

November 4, 1999

U.S. Sues 7 Utilities on Air Pollution Charges, Citing 32 Coal-Fired Plants in 10 States

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By DAVID STOUT



WASHINGTON -- In what federal officials called one of the biggest enforcement actions in the nation's history, the government sued seven giant electric companies in the Midwest and the South on Wednesday, accusing the utilities of defying anti-pollution regulations and illegally contaminating the air breathed by millions of Americans.

The government took action against 32 coal-fired plants in 10 states, saying that if the plants reduced pollution as required it would have the same effect as taking 26 million cars off the road.

The government accused the companies of modernizing their generating plants without modernizing their pollution controls as required by the Clean Air Act. The Justice Department filed the lawsuits on behalf of the Environmental Protection Agency. The government contends that 17 power plants run by the companies have fouled the atmosphere for years and have contributed "to some of the most severe environmental problems facing the United States today."

"When children have trouble

A List of Plants Involved

Parent company

American Electric Power of Columbus, Ohio.

Plants Accused of Violations

Cardinal, Brilliant, Ohio

Mitchell, Moundsville, W.Va.

Muskingum River, Beverly, Ohio

Philip Sporn, New Haven, W.Va.

Tanner's Creek, Lawrenceburg, Ind.

Parent Company

Cinergy of Cincinnati.

Plants Accused of Violations

Beckjord, New Richmond, Ohio

Cayuga, Cayuga, Ind.

breathing because of pollution from a utility plant hundreds of miles away, something must be done," Attorney General Janet Reno said.

The civil suits, which seek to fine the companies and force them to install modern anti-pollution equipment, were filed in Federal District Court in five Midwestern and Southern cities.

The E.P.A. administrator, Carol Browner, said the seven defendants had committed "very, very significant violations of the Clean Air Act," an accusation that the utilities immediately denounced.

Ms. Browner said the companies had illegally retooled old, pollution-spewing coal plants without notifying regulators, getting the necessary permits and installing expensive new equipment to reduce emissions and meet pollution standards that apply to new plants.

"They chose not to," Ms. Browner said, "because they knew that if they did they'd have to reduce their pollution, and they didn't want to do it."

The utilities' motive, she added, was to prolong the lives of the old plants and to avoid the cost of building new plants with tough, modern standards.

The defendants denounced the government's action. "We regret that the agency has again demonstrated that it prefers headlines and confrontation over consensus-building," said Dale Heydlauff, a vice president of American Electric Power of Columbus, Ohio. "We are fully prepared to vigorously defend against these allegations, and we believe we will prevail."

In addition to the lawsuits, the government took administrative action against the Tennessee Valley

Parent Company

First Energy of Akron, Ohio.

Plants Accused of Violations

Sammis, Jefferson County, Ohio.

Parent Company

Illinois Power, Decatur.

Plants Accused of Violations

Baldwin of Baldwin, Ill.

Parent Company

Southern Indiana Gas and Electric, Evansville

Plants Accused of Violations

F.B. Culley, Yankeetown, Ind.

Parent Company

Southern Company, Atlanta.

Plants Accused of Violations

Barry, Mobile, Ala.

Bowen, Cartersville, Ga.

Gorgas, Jasper, Ala.

Miller, Birmingham, Ala.

Scherer, Macon, Ga.

Parent Company

Tampa Electric Company, Tampa, Fla.

Plants Accused of Violations

Big Bend, Tampa

Gannon, Tampa.

Plants Named in an Administrative Order Against Tennessee Valley Authority

Widows Creek, Stevenson, Ala.

Colbert, Tuscumbia, Ala.

Bull Run, Clinton, Tenn.

Paradise, Drakesboro, Ky.

Authority, accusing the agency of similar violations at seven of its plants. And it issued violation notices -- possible precursors to additional suits -- accusing the seven electric utilities of pollution violations at eight other plants.

The government's actions Wednesday are the latest volley in a long-running battle over the air pollution that starts in the Midwest and drifts on the wind toward the highly polluted New York region and on to New England. Northeastern states and the federal government have argued that unless new controls are imposed in the Midwest, the chronic air pollution problems of the Northeast can never be cured. But they have met mixed success in their efforts to solve the problem with new air pollution regulations, which always end up being challenged in court.

The lawsuits brought immediate praise from environmental groups. "This is a major and much-needed enforcement action," said Frank O'Donnell, executive director of the Clean Air Trust, in a typical reaction.

Whichever side prevails, it was clear today that a fundamental dispute is over definitions -- most importantly, the difference between major renovations and "routine maintenance."

The Clean Air Act of 1970 sets strict standards for new pollution sources, in this instance power plants, and much looser ones for older sources. The older sources are "grandfathered," meaning that they can continue to operate with relatively minor improvements as long as their owners do not undertake major renovations, in which case the plants are supposed to come under the strict new standards.

Ms. Browner said about 100 E.P.A. investigators working over the last two years had uncovered many instances in which the utilities had embarked on big capital improvements, then tried to pass them off as routine maintenance. "In one plant they spent \$60 million for five new furnaces," she said. "That's hardly routine maintenance."

But lawyers for the utilities are likely to argue that spending

Cumberland, Cumberland City, Tenn.

John Sevier, Rogersville, Tenn

T.H. Allen, Memphis.

Plants Receiving Notices of Violation

Parent Company

Cinergy

Plants

Wabash River, Ohio

Gallagher, Ind.

Parent Company

American Electric Power

Plants

Conesville, Ohio.

Parent Company

Southern Company

Plants

Kraft, Ga.

Gaston, Ala.

Greene County, Ala.

Watson, Miss.

Crist, Fla.

millions of dollars to improve a decades-old plant could be construed as "routine maintenance," especially if the alternative is to spend hundreds of millions on a new plant.

Peter H. Lehner, chief of the New York Attorney General's Environmental Protection Bureau, said both sides would recruit experts to argue points like that. "If it's routine maintenance, we lose," he said. "If it's not, they lose."

The New York Attorney General's office has been preparing similar lawsuits against some of the same defendants named in the federal suits lodged Wednesday, and Lehner said his office would work closely with lawyers in Washington.

Gov. George E. Pataki of New York welcomed the action by the environmental agency. "I hope this is only the first step by the E.P.A. to hold these power plants accountable and give New Yorkers the protection we need and deserve from pollution originating in the Midwest and Southeast," the governor said.

Besides American Electric Power, the defendants in the federal suits are the Cinergy Corporation of Cincinnati; FirstEnergy of Akron, Ohio; Illinois Power, a subsidiary of Illinova Inc.; Southern Indiana Gas and Electric, a subsidiary of Sigcorp Inc.; Southern Company, based in Atlanta, and the Tampa Electric Company of Florida, a subsidiary of Teco Energy Inc.

The 32 target plants are in Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Mississippi, Ohio, Tennessee and West Virginia. Ms. Browner said she expected more plants to be cited, either in lawsuits or citations.

Ms. Reno and Ms. Browner said the government could seek fines amounting to millions of dollars -- \$27,500 for each day in violation after Jan. 30, 1997, and \$25,000 for each day in violation before that under the Clean Air Act.

But Ms. Browner said extracting fines was not her agency's main goal. "Our first order of business -- we just want to be very clear about this -- we want the pollution out of the air," she said. Lawyers familiar with the litigation predicted that some parts of the suit might be settled.

The federal officials and environmentalists said the pollution involved -- blends of sulfur and nitrogen as well as soot -- strip leaves from trees, foul lakes and stain old copper statues. Far more important, they said, the pollution makes it harder for people to breathe.

And while the west-to-east flow of air pollution on the prevailing winds can create the impression that pollution is a problem foisted on the East by people in the West, that is not altogether true, environmentalists have long argued. The Clean Air Task Force said

in a statement today that Midwesterners are more susceptible to pollution-related ailments than Northeasterners.

Ms. Browner asserted that the utilities sued today could effect proper anti-pollution controls by spending \$3 million or \$4 million a year -- relatively small change when compared to the \$100 million or more that some of their power plants bring in. Therefore, she said, rates for consumers would rise only slightly.

That assertion is likely to be disputed as the cases move through the courts. Another issue will be if the utilities are doing their best to safeguard the environment.

One defendant, FirstEnergy, said it was. "As a company that has spent more than \$4.25 billion on environmental protection, we take our environmental responsibilities very seriously," the company said in a statement Wednesday.



What's the word on health?

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reform

FOR TOMORROW'S
9:30 MTB.

CLEAN ELECTRIC POWER FOR THE 21ST CENTURY

The Clean Air and Regulatory Modernization Act

As the centerpiece of an initiative on "Clean Energy for the 21st Century," the Administration could **propose legislation for a comprehensive plan to clean up air pollution from the electric power industry in the United States.**

- Fossil-fueled electric power plants are major sources of four air pollutants that have serious adverse health, environmental, and economic impacts: *sulfur dioxide, nitrogen oxides, mercury, and carbon dioxide*. The electric power industry is responsible for one-quarter to two-thirds of national emissions, depending on the pollutant.
- The plan proposed here would replace complex and somewhat uncoordinated provisions of the current Clean Air Act that apply to the electric power industry with *an integrated package of measures* designed to meet environmental needs for all four pollutants over the next 15 years at the lowest possible cost and with the greatest degree of certainty and flexibility for the industry.

I. Integrating Air Quality Objectives to Maximize Benefits and Minimize Costs

Reductions in power plant emissions of these four air pollutants would produce *huge public health and environmental benefits*.

- Public health benefits from reducing sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions to levels at the upper end of the ranges given in Table 1 (next page) are estimated by EPA to be worth *more than \$30 billion per year*. This estimate includes only the economic value of premature deaths and illnesses due to fine particles resulting from these two pollutants and does not include their contribution to ozone smog, acid rain, impaired visibility, or materials damage. *dispute*
- Power plants are the last major unregulated source of mercury into the air. Mercury emissions that reach lakes and other water bodies enter the food chain and reach high concentrations in fish. Forty-one States currently impose warnings or restrictions on fish consumption due to mercury contamination.
- Power production accounts for 40% of U.S. emissions of carbon dioxide, the main greenhouse gas, and will be a key sector in any effort to address climate change.

Integrating control strategies for these four pollutants would *substantially reduce costs*.

- EPA and industry analyses have shown that having up-front knowledge of future requirements for all four pollutants would lead firms to follow significantly different and less expensive compliance strategies at individual plants, compared with compliance choices made when the pollutants are addressed one-after-the-other as under current law.
- For example, EPA analysis shows that an integrated strategy to achieve an 50% additional reduction in SO₂ (to 4.5 million tons) together with a CO₂ cap of approximately 2 billion

metric tons would save \$450 million per year compared to the cost of controlling the two pollutants to those levels separately.

- The savings come from the opportunity to make cost-effective plant investment and retirement decisions with all pollution control requirements in view, rather than investing in “add-on” control equipment that is effective for SO₂, NO_x, or mercury but would be made obsolete by future requirements for CO₂.

Integration, advance knowledge, and certainty regarding environmental requirements will have even greater value over the coming decade as the electric power industry undergoes the strains of the transition to competition.

II. Providing a Stable, 15-Year Vision of Power Plant Emission Controls

Timing. An integrated air quality strategy could set emission reduction targets for the four major pollutants through 2015, giving industry a 15-year vision of their environmental obligations. Requirements could be “phased-in” with the first steps taking effect in the 2003-2008 period. Such a schedule would provide both adequate lead-time and long-term stability.

Levels. Emission control requirements would be set in terms of national and annual emission budgets (or “caps”) for each pollutant (carbon dioxide might have a five-year budget).

- Emission budgets would reflect environmental needs over the next 15 years, taking into account cost-effectiveness and technological feasibility. To lower costs, these emissions budgets would be implemented through “cap and trade” emissions trading programs like the current acid rain program (see section III).

For reference, current legislative proposals contain the following national, annual emission budgets and timing:

Table 1: Electric Power Pollution Control Legislation Proposed in the 106th Congress*

Pollutant	1990 emissions (tons/year)	Projected 2010 emissions† (tons/year)	Range of Emissions Budgets Proposed* (tons/year)
SO ₂	15.9 million	9.6 million	3-4.5 million
NO _x	6.7 million	5.7 million	1.7-2.2 million
CO ₂ (metric tons)	1.91 billion	2.28 billion	1-1.9 billion
Hg	52 tons	51 tons	0-16 tons

*Summarizes seven bills introduced by Sens. Jeffords, Leahy, and Moynihan, and Reps. Allen, Kucinich, Pallone, and Waxman. Not every bill covers all four substances.

†Projected 2010 emissions assume Clean Air Act requirements for NO_x and SO₂. CO₂ and Hg are not addressed in current law; therefore no reductions due to control requirements are assumed in these projections.

None of the bills that address carbon dioxide provides for credits from sink activities or from emission reductions made outside the power sector itself. Such provisions could be added as cost-saving measures.

- For example, power generators could be permitted to obtain additional emission allowances by financing carbon sequestration actions by private landowners. A voluntary carbon bank could be established that links utility investments with landowners who elect to plant forests or switch to low-till farming. The carbon bank could perform several vital functions such as assuring that eligible sequestration projects are additional to expected trends and certifying carbon sequestration credits as they accrue.

*probably
need to
do this;
need VSA
involvement.*

III. Enhancing Flexibility Through "Cap and Trade"

Emission reductions would be implemented through "cap and trade" programs, similar to the model adopted in the Clean Air Act's acid rain program for sulfur dioxide.

- The acid rain cap and trade program has cut SO₂ emissions from power generation with cost-savings projected at over \$4 billion/year (80% less than a traditional regulatory approach).
- Cap-and-trade programs ensure that an environmental target is achieved while minimizing costs by allowing individual plants to choose their least costly compliance options, including emissions trading. Sources are free to trade "emission allowances," each of which permits a source to emit a standard amount (e.g., one ton) of a certain pollutant.
- The "infrastructure" for cap and trade programs is already largely in place. Power plants already monitor and publicly report on hourly emissions of three of the four pollutants (SO₂, NO_x, and CO₂).
- Emissions trading would generally be unrestricted, except for appropriate measures to prevent formation of local "hot-spots." (For example, under the current acid rain program, every source has to limit its own SO₂ emissions enough to avoid local violations of the health-based "national ambient air quality standard" for SO₂; it cannot use emissions allowances to permit emission levels that violate this health-based standard.)

IV. Suspending New Source Review and Further Enhancing Flexibility and Certainty

Currently, power plant owners must undergo a permit process called "new source review" and install the best available control technology whenever they build or refurbish a power plant.

- This plant-by-plant review would not be necessary if power plants were required to operate under adequate emissions caps for each of the pollutants of concern.
- Consequently, an integrated electric power proposal could suspend new source review prospectively for the 15-year period covered by the emission caps.
- This proposal would be viewed very favorably by the electric power industry.

Additional mechanisms exist to provide flexibility and certainty to the power industry over the 15-year period covered by the proposed emissions caps.

- If these emissions budgets are set at levels that meet environmental needs, the proposal could guarantee power companies that no additional regional or national requirements would be imposed on them during this 15-year period due to other Clean Air Act provisions. (State authority to address local emission reduction needs would be retained.)
- Unlike several of the pending bills, there would be no need under an integrated Administration proposal for specific provisions (such as age limits or efficiency targets) aimed at old plants that currently are "grandfathered" under the Clean Air Act.
- Consideration could be given to whether specific targets for renewable energy are necessary.

V. Distributing the Emissions Budgets

For each pollutant, an integrated proposal would need to address how emissions allowances would be distributed to each power plant. Allowances for some pollutants (e.g., carbon dioxide) could have very substantial value. Thus the method of distribution may matter more than when the acid rain program was established.

- Allowances could be allocated to sources at no charge through a variety of potential eligibility tests and formulas.
- Allowances could be auctioned to the highest bidders.
- Allocation and auction approaches could be combined in hybrids.

The main difference between these distribution methods is that allocation without charge would assign the value of those allowances to the power industry, while auctioning them would make revenue available for other purposes (e.g., reducing social security or income taxes). Each method will be favored or opposed by different constituencies.

- If allowances are allocated, decisions will be needed on whether allocations should be permanent or periodically updated; whether they should be based on heat input or electricity output and whether they should go only to fossil-fuel sources, or also to renewable and nuclear units also.
- Because auction approaches would raise and disburse revenue, they may involve more Congressional committees in the legislative process than allocation approaches.

Both methods would allow for a portion of the allowance value to be used to meet specific objectives (e.g., adjustment assistance for dislocated workers, support for demand-side energy efficiency programs – see Section VII, below). For example, a portion of the allowances could

be allocated to dislocated workers or firms that make energy-efficiency investments. The same objectives could be accomplished with auction revenue.

An integrated electric power proposal could include a specific proposal on some or all of these allowance distribution issues. Alternatively, an initial proposal could deliberately be silent on these issues, leaving them for further interaction with stakeholders and Congress later in the legislative process.

VI. Further Flexibility From Banking/Credit for Early Action

A cap and trade program that makes pollution reductions in two or more phases can allow “banking.” Banking permits a plant to make extra reductions in the first phase and save the unused portion for later use or sale. Banking provides sources more flexibility in their compliance planning and can stimulate the market and reduce overall costs. Banking is one way to provide credit for early action.

- Banking should be limited only where large withdrawals from the bank could create a health risk. This concern relates solely to large withdrawals of banked NO_x allowances, which could lead to ozone smog episodes under some circumstances.

An electric power bill could also include a general provision to guarantee firms *outside* the power industry that they will not be penalized for taking early actions to reduce greenhouse gas emissions when programs that apply to other sectors are established.

VII. Other Issues

Certain issues mentioned above should be evaluated further.

Worker Dislocations. Emission reduction proposals for the power industry will have to consider the potential impacts on industries and their employees. The integrated air quality strategy could establish a fund (with allowances or auction revenue) for mitigating possible worker dislocations that result from significant shifts in the electric generation industry.

Demand-Side Reductions. DOE and EPA analyses indicate that the overall costs of meeting emissions caps for these pollutants can be lowered substantially by enhancing investment in energy-efficiency measures to reduce electricity demand.

- One approach that could be incorporated into the integrated air quality strategy is an allowance “set-aside” to reward demand-side energy efficiency investments.
- An alternative approach would use a portion of revenue received from auctioning allowances for the same purpose.
- These approaches could supplement the Public Benefits Fund proposed in the Administration’s electricity competition plan.

www.earthday.net



April 22, 2000



endorse it:

(Show your support for the Clean Energy Now! campaign.)

Along with the attention you devote to your favorite environmental causes for Earth Day 2000, we ask that you help us focus attention on the issue of energy. Because the earthly things you most want to save will surely be lost unless we act now to curtail global warming and the other perilous side effects of our unbalanced energy diet.

Please lend your support by endorsing the Earth Day 2000 Clean Energy Agenda. You may do so either as an individual or on behalf of a group. The Clean Energy Agenda will be presented to government and corporate leaders as a mandate for America to apply its techno-savvy to developing power that befits the 21st century.

A rapid transition to energy efficiency and renewable energy sources will combat global warming, protect human health, create new jobs, and ensure a secure, affordable energy future. In contrast, our current reliance on coal, oil, and nuclear power imperils the world's climate, fouls the environment, harms human health, and results in the proliferation of nuclear materials.

The choice is clear: We must opt to meet our energy needs without threatening our children's future. The Earth Day 2000 Clean Energy Agenda outlines common-sense ways to mobilize American ingenuity and resources for a rapid transition to renewable energy sources. Adopting it will eliminate waste, phase out fossil fuels and nuclear power, and help the United States lead the world into a sustainable energy future.

CLEAN POWER: In the next decade, increase four-fold the amount of energy obtained from non-hydro renewable sources such as the sun and wind. By 2020, produce at least one-third of the nation's energy from renewable sources, and double the efficiency of energy use in homes, buildings, transportation, and industry.

CLEAN AIR: Clean up our power plants by setting progressively tighter limits on all power plant pollution — including carbon dioxide, the major cause of global warming. Close the loophole that allows old coal-fired power plants to pollute much more than newer plants.

CLEAN CARS: Hold sport utility vehicles, pick-up trucks and mini-vans to the same air pollution standards as cars. Improve the fuel efficiency of new cars and light trucks to a combined average of 45 MPG by 2010 and at least 65 MPG by 2020. Offer incentives that build strong markets for renewable fuels and for clean vehicles powered by hybrid motors and fuel cells.

CLEAN INVESTMENTS: Quadruple federal investments in renewable energy and energy efficiency within five years, and continue this momentum over the long term. Stop spending taxpayer dollars to subsidize the coal, oil, and nuclear industries. Provide adequate resources and job training for affected workers and communities to ensure a just transition to a sustainable energy economy.

Sign up your support for the Clean Energy Agenda on the reverse side. You can also endorse the campaign at: www.earthday.net/signup/endorse.asp

THE WHITE HOUSE
WASHINGTON

January 7, 2000

MEMORANDUM FOR JOHN PODESTA

GENE SPERLING
CHARLES BURSON
GEORGE FRAMPTON
MARTIN BAILY
JACK LEW

CC: KAREN TRAMONTANO
BRUCE REED
DAVID BEIER
SYLVIA MATHEWS
ROBERT LAWRENCE
CHUCK BRAIN

FROM: ROGER BALLENTINE 
RONALD E. MINSK RM

SUBJECT: "Clean Energy for the 21st Century" - Domestic Power Plant Proposal

I. Overview

As the domestic centerpiece of its initiative on "Clean Energy for the 21st Century," the Administration could announce a comprehensive proposal to reduce air pollution from the domestic power plants. This proposal would reflect the "next generation" of environmental regulation. It would replace the command-and-control approach of regulating power plant emissions in the Clean Air Act with a tough but flexible market-oriented approach that could achieve the greatest environmental and public health gains at the least possible cost.

- Fossil-fueled electric power plants are major sources of four air pollutants that have serious adverse health, environmental and economic effects: *sulfur dioxide, nitrogen oxides, mercury, and carbon dioxide*. The electric power industry is responsible for one-quarter to two-thirds of national emissions, depending on the pollutant. Moreover, 45 percent of the generation capacity is more than 30 years old, and 36 percent of the total generation comes from plants that are more than 30 years old, in part a result of the "grandfathering" of these plants under the original Clean Air Act.
- The proposal would replace complex, often uncoordinated, and sometimes inconsistent

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2017-1092-6

provisions of the current Clean Air Act with *an integrated multi-pollutant plan for clean air*. This approach would establish emission targets for four pollutants over the next 15 years. The targets would constitute the only regulation of power plant emissions (except for limited regulation necessary to avoid local air pollution problems or hotspots), thereby providing the industry with an increased degree of certainty and a flexible and cost-effective means to achieve the targets. In addition, by eliminating prospective application of EPA's New Source Review (NSR) rules, we would be giving the industry meaningful regulatory relief from NSR, although we would be imposing new regulatory requirements on carbon dioxide and mercury emissions.

Because of the political considerations surrounding a significant modification of the Clean Air Act, prior to further work by an interagency group, we request your approval or disapproval of the concept, and your guidance with respect to the parameters we should abide by if you decide that we should proceed. If you direct us to proceed, we would like to know if we should examine the design of an emissions trading system, including the choice regarding allocation or auction of permits, and economic dislocation issues. If you choose to support the proposal, we would like to try to develop it sufficiently to announce it in the State of the Union Address (perhaps nothing more than committing to submit a proposal to Congress by a specified date, such as Earth Day).

II. Description of Integrated Emissions Reduction Proposal

This proposal would establish an integrated cap-and-trade program for four pollutants -- nitrogen oxides, sulfur dioxide, mercury, and carbon dioxide -- for the electric power generation industry.^{1,2} In exchange for imposing tough emissions targets on power plants, the proposal would establish certainty about future emissions requirements in that the emission limits would constitute all clean air requirements for the industry over the next fifteen years. In establishing the emission targets, we would consider both economic and technical factors. The proposal also would reduce the facilities' regulatory burden through the suspension of the Clean Air Act's New Source Review requirements.

To enable power plants to meet their emissions targets at the lowest cost possible, each company could meet the standards using market-based emissions trading, as the utility sector does now under the Clean Air Act's acid rain program (the acid rain emissions trading program has cut SO₂ emissions from power generation with cost-savings projected at over \$4 billion per year, 80 percent less than a traditional regulatory approach). Trading programs ensure that an

¹ The concept of an integrated clean air strategy was first raised by utilities as part of the industry consultations launched by the Vice President two years ago.

² EPA has suggested that we should also consider including industrial boilers in our proposal, although that might complicate the proposal by extending "downstream" in the economy, further complicating the ability to move towards an economy-wide regulatory scheme in the future.

emissions target is achieved while minimizing costs by allowing individual plants to choose their least costly compliance options, including emissions trading. An "infrastructure" for cap and trade programs in the utility industry is already largely in place, because power plants already monitor and publicly report on hourly emissions of three of the four pollutants (SO₂, NO_x, and CO₂). The costs of meeting the targets could be further reduced by allowing power plants to meet their targets with the use of domestic offsets (e.g., sinks for carbon or "cash for clunkers" for NO_x).

This proposal would replace the current approach to clean air regulation, which emphasizes incremental air quality improvements as plants are incrementally modernized. It would suspend the Clean Air Act's New Source Review requirements for those facilities subject to the cap. Under current law, utilities are subject to permit review and must install best available control technology when they build a new plant or refurbish an old one. The institution of national emission budgets or caps makes this provision unnecessary, except to avoid local air pollution problems or hotspots. The new integrated strategy would give utilities fewer short-term regulatory requirements in exchange for a long-term commitment to reduce emissions of the covered pollutants.

The proposal could also include provisions to distribute the permits to utilities either through direct government allocation or through an auction. This is a significant decision; the value of permits for carbon dioxide alone is estimated to be in the tens of billions of dollars. In addition, the proposal could include measures to mitigate economic dislocation associated with the plan, perhaps paid for with auction receipts or allocation of permits to affected communities.

III. Political Considerations

This proposal would have important political benefits such as in the environmental community and political constituencies in the Northeast and California. It would demonstrate our seriousness about making domestic progress on reducing greenhouse gas emissions and would clean our air using a market-based approach. The proposal would also, however, entail significant political risks. It will likely offend important industrial and Midwest political constituencies and could impose significant costs on the economy.

Two events in 2000 will focus domestic and international attention on U.S. domestic actions to reduce greenhouse gases and other emissions in our energy sector -- the 30th Anniversary of Earth Day on April 22 and the next round of climate change negotiations beginning November 13th. A proposal to reduce emissions from power plants would build support with domestic and international audiences, who have been critical that the United States is not taking appropriate action to reduce emissions. Although this Clean Energy proposal is not strictly a climate change issue, any strong domestic action that would reduce greenhouse gas emissions would enhance the U.S. negotiating position on the cost-lowering flexibility mechanisms of the Kyoto Protocol.

The proposal could be portrayed more broadly as a visionary attempt to recast environmental regulation for the 21st Century. This proposal could also be received as a important health initiative, responsive to public concerns about the need for clean air to reduce incidence of asthma and other maladies. Although a proposal of this magnitude would be impossible to adopt in this Congress, it would receive some bipartisan support, and could create a sharply contrast an Administration seeking to reduce emissions and Congressional lethargy regarding the problems of local air pollution and global warming. Support for the proposal would be strongest in the Northeast and California. In addition, the proposal to reinvent Clean Air Act regulation and to achieve the emission targets through emissions trading would be favorably received by some utility companies, and we could get some validation and perhaps support from segments of the industry. Companies that provide clean fuels (e.g., natural gas suppliers) and companies that develop and manufacture clean power technologies (e.g., distributed generation, wind, and solar) would also support the proposal.

The 106th Congress has already seen a number of bills regulating power plant emissions. These bills have received some bipartisan support. A list of the bills with sponsors and co-sponsors is attached.

A decision to go forward with a proposal also entails significant political risks. It would likely lead to a contentious debate, with particularly strong opposition from the coal industry and workers concerned about loss of coal production. They will be strongly opposed to the proposal in any event, although perhaps less if we include a proposal to assist dislocated workers and injured communities. Members of Congress from states with significant power generating capacity, and coal and automobile production may oppose this approach, including those from Illinois, Indiana, Kentucky, Michigan, Ohio, and West Virginia. It could also cause a split within the Democratic Caucus in the House and Senate.

Another significant political issue regarding the proposal is its cost, which opponents may characterize as an energy tax. Even with the flexibility provisions, this proposal will lead to higher costs at power plants, which would likely lead to utility rate increases. They might also note that the plan does not provide them with absolute certainty because the fate of the Kyoto Protocol, with its targets and international flexibility mechanisms, is unknown. Although the proposal may be expensive, we cannot conduct any analysis until we have identified emission targets. If the analysis concludes that carbon permits will trade above \$23 per ton (the Administration's estimate of the cost of a carbon permit under Kyoto), which is likely, the proposal will be criticized on that basis.

Proceeding with the proposal could also complicate ongoing EPA enforcement actions against several power plants. If the proposal includes limits for emission of NO_x, it could be difficult for EPA to settle its ongoing cases with limits less stringent than our proposal. Administrator Browner suggested that we could attempt to sidestep that problem by announcing a proposal without specific limits for NO_x. Another consideration regarding our choice of

emission limits are the positions of some Eastern Republicans, including Governors Pataki and Whitman. It would be problematic to propose limits less stringent than their proposals.

Opponents may also charge that the proposal is inconsistent with the President's October 1997 three-stage plan for addressing climate change. That plan proposed five years of priming the pump through R&D, tax incentives, early action credit, federal leadership, and industry consultations, a second stage of review and evaluation beginning around 2004, and a final stage of mandatory reductions through domestic and international emissions trading beginning in 2008. This charge could be resolved by making the timing of any mandatory reductions under the sector specific plan consistent with the timing of the President's plan.

This proposal might also attract criticism that we are attempting to implement the Kyoto Protocol prior to Senate ratification. Opponents will also argue that this proposal is inconsistent with EPA's representations that the Agency has no plans to regulate carbon, an issue about which there has been great concern in Congress. While such arguments may have little merit, as we would merely be proposing new legislation for Congress to consider, we should be aware that such arguments could have ramifications such as additional environmental riders.

Finally, the inclusion or absence of specific proposals regarding the distribution of permits through allocation or auction, or economic dislocation adjustment provisions, will focus attention on distributional issues. A proposal to auction permits may be attacked as a tax, while a proposal to allocate permits may face the charge of a government giveaway to polluters.

IV. First-Tier Policy Issues

Development of a proposal will entail wrestling with a number of critical policy issues. Among the most important are:

- *Sectoral approach to CO₂*: Economists have argued that the most efficient way to address the problem of climate change is to design an economy-wide system that "prices" carbon across all sectors, rather than regulating one sector. An economy-wide system permits all actors to find the most cost-effective emission reductions throughout the economy. A strategy aimed only at the utility sector would result in utilities achieving their reductions in a less cost-effective manner than under an economy-wide approach and may create administrative problems, economic inefficiencies, or flight to unregulated industries. However, an integrated clean air strategy tailored for this sector takes advantage of unique factors in this industry and increase certainty regarding environmental planning. By limiting the breadth of the proposal to power plants, however, it may make it more costly for the remainder of the economy to reduce carbon emission in the most cost-efficient manner.

- *Design of trading system:* Developing a strategy for one sector may prejudice the ultimate design of an economy-wide system. For example, it would be more efficient to implement an upstream trading program (*i.e.*, at the mine shaft for coal, the wellhead for gas, the refinery for domestic oil, and the port for imported petroleum products) rather than impose the burden on downstream users. In the future, it may be difficult to integrate the fuel processors into a system, if the utilities have already begun to hold these permits.
- *Allocation of permits:* If the government allocates permits directly to utilities, it would probably be difficult to create an auction of carbon permits at a later date. A decision to do so therefore, may be the functional equivalent of deciding to forego billions of dollars in annual revenue from the electricity generation industry to the federal government by effectively giving the revenue to the utilities through free permits. To provide a sense of the magnitude of these revenues, auction revenues based on the Administration's \$23 per ton carbon price estimate for the Kyoto Protocol would amount to about \$35 billion per year for an economy-wide system (and roughly one-third that for an electricity generation industry-only system). If the price per ton of carbon is double the \$23 estimate, the potential government revenues would likewise double.
- *Careful examination of emission targets and timing:* We must strike a careful balance between levels of control and the timing of those controls. On the one hand, the controls must be ambitious enough to assure the public that the utility industry is doing enough to ensure public health protection and to warrant the proposed regulatory relief. On the other hand, we must assure the public that in establishing these goals, we considered adequately economic and technical constraints.
- *Regulating Mercury:* We would also need to closely examine the scientific basis for controlling emissions of mercury. Mercury emissions have been regulated at incinerators, but not for power plants. Under a process established under the Clean Air Act, the Administration is planning to make a regulatory determination regarding mercury from power plants in December 2000. Including mercury in a comprehensive proposal at this time would prejudice that ongoing process.

V. Conclusion

Because we would not expect to see any significant legislative action in this area this year, our proposal is primarily one meant to articulate a new framework for environmental regulation of air pollution for the next century, and to demonstrate a serious domestic commitment to reducing greenhouse gases by addressing one of the two significant emitting sectors (autos being the other). This proposal would dovetail with our international Clean Energy for the 21st Century initiative, which focuses on helping developing countries meet their energy demands in the cleanest possible fashion. Indeed, a lack of domestic action could

undercut this international effort. It could also be presented as a significant health initiative addressing an issue of rising public concern.

Strong support for such a plan would be expected from key constituencies and allies in both parties. We would likely please public health and environmental organizations (who have made clean energy and climate change their top priority for Earth Day), Northeastern congressional delegations and governors (who have sponsored or supported similar legislation), and areas of the country with serious local air quality problems such as California. Support would also be expected from cleaner electric utilities that are disadvantaged by higher-emitting utilities. Although this Clean Energy proposal is not strictly a climate change issue, any strong domestic action that would reduce greenhouse gas emissions would enhance the US negotiating position on the cost-lowering flexibility mechanisms of the Kyoto Protocol.

In announcing this initiative, however, we would be challenging directly powerful and well-represented interests and would likely receive strong opposition from key constituencies and Democratic allies, particularly those in the Midwest. We could expect opposition from some labor unions (who fear the loss of jobs in coal mining and railroads), a portion of the utility community (for being singled out from other industries), and the industrial community (which may feel that their sectors of the economy could be the next to be regulated). We can also expect opposition from governors and Members of Congress from coal mining and significant power generating states and local officials in the communities that would be most directly affected by a significant reduction in the use of coal. Without additional outreach, we cannot say whether we would get any mainline industry support.

We also might be accused of proposing a new expensive tax. If our analysis suggests that carbon reduction would cost more than \$23 per ton, we also might be criticized for proposing an initiative that was more expensive than the Kyoto Protocol. Moreover, implementing this proposal might make it more difficult ultimately to implement an economy wide trading system, which would achieve the sought after reductions at the lowest possible cost.

Given the significant political risks in promoting this proposal, we need your feedback prior to investing the time that it would take to more fully develop it. If you choose to support the proposal, we would like to try to develop it sufficiently to announce our intentions in the State of the Union Address. In order that we may proceed as quickly as possible, we would appreciate feedback at your earliest convenience.

Power Plant Bills 106th Congress

BILL NUMBER	<i>S. 1949</i>	<i>S. 1369</i>	<i>S. 172</i>	<i>H.R. 2900</i>	<i>H.R. 2667</i>
SPONSOR	Leahy (D-VT)	Jeffords (R-VT)	Moynihan (D-NY)	Waxman (D-CA)	Allen (D-ME)
COSPONSORS	(none)	Lieberman (D-CT) Moynihan (NY) Schumer (D-NY) Kerry (D-MA) Lautenberg (D-NJ) Dodd (D-CT) Kennedy (D-MA) Reed (D-RI) Feinstein (D-CA) Snowe (D-ME) Boxer (D-CA)	Lieberman (D-CT) Schumer (D-NY) Jeffords (R-VT) Reed (D-RI) Dodd (D-CT) Kerry (D-MA) Feinstein (D-CA) Boxer (D-CA) Lautenberg (D-NJ) Kennedy (D-MA) Wyden (D-OR)	Boehlert (R-NY) Olver (D-MA) DeLauro (D-CT) Hinchey (D-NY) Lewis (D-GA) McKinney (D-GA) Farr (D-CA) Vento (D-PA) Kennedy (D-RI) McGovern (D-MA) Schakowsky (D-IL) Jackson (D-IL) Moran (D-VA) Lantos (D-CA) Kucinich (D-OH) Kilpatrick (D-MI) Miller (D-CA) Gutierrez (D-IL) Nadler (D-NY) Weiner (D-NY) Gejdenson (D-CT) Eshoo (D-CA) Baldacci (D-ME) Meehan (D-MA) Larson (D-CT) Ackerman (D-NY) Pallone (D-NJ) Smith (R-NJ) Sanders (I-VT) Johnson (R-CT) Berman (D-CA) Filner (D-CA)	Saxton (R-NJ). Baldwin (D-WI) Baldacci (D-ME) Barrett (D-WI) Bonior (D-MI) Capuano (D-MA) Davis (D-IL) Delahunt (D-MA) DeLauro (D-CT) Gutierrez (D-IL) Hinchey (D-NY) Inslee (D-WA) Kennedy (D-RI) Kilpatrick (D-MI) Maloney (D-NY) Miller (D-CA) Napolitano (D-CA) Neal (D-MA) Olver (D-MA) Quinn (R-NY) Roukema (R-NJ) Rush (D-IL) Sanders (I-VT) Schakowsky (D-IL). Stark (D-CA) Underwood (D-Guam) Vento (D-PA) Markey (D-MA) Waxman (D-CA)

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*Bill Summary & Status for the 106th Congress**(Updated list)***NEW SEARCH | HOME | HELP | ABOUT COSPONSORS****H.R.2980**Sponsor: Rep Allen, Thomas H. (introduced 9/30/1999)Related Bills: S.1949

Latest Major Action: 10/25/1999 Referred to House subcommittee

Title: To reduce emissions of mercury, carbon dioxide, nitrogen oxides, and sulfur dioxide from fossil fuel-fired electric utility generating units operating in the United States, and for other purposes.

COSPONSORS(30), ALPHABETICAL [followed by Cosponsors withdrawn]: (Sort: by date)

<u>Rep Baldacci, John Elias</u> - 9/30/1999	<u>Rep Baldwin, Tammy</u> - 1/31/2000
<u>Rep Blumenauer, Earl</u> - 9/30/1999	<u>Rep Capuano, Michael E.</u> - 9/30/1999
<u>Rep DeGette, Diana</u> - 10/1/1999	<u>Rep Delahunt, William D.</u> - 9/30/1999
<u>Rep DeLauro, Rosa L.</u> - 10/4/1999	<u>Rep Hinchey, Maurice D.</u> - 9/30/1999
<u>Rep Holt, Rush D.</u> - 9/30/1999	<u>Rep Jones, Stephanie Tubbs</u> - 11/16/1999
<u>Rep Kennedy, Patrick J.</u> - 9/30/1999	<u>Rep Kucinich, Dennis J.</u> - 9/30/1999
<u>Rep Maloney, Carolyn B.</u> - 9/30/1999	<u>Rep Martinez, Matthew G.</u> - 9/30/1999
<u>Rep McDermott, Jim</u> - 9/30/1999	<u>Rep McGovern, James P.</u> - 2/10/2000
<u>Rep Meehan, Martin T.</u> - 10/27/1999	<u>Rep Miller, George</u> - 9/30/1999
<u>Rep Nadler, Jerrold</u> - 9/30/1999	<u>Rep Napolitano, Grace F.</u> - 10/6/1999
<u>Rep Neal, Richard E.</u> - 9/30/1999	<u>Rep Olver, John W.</u> - 9/30/1999
<u>Rep Rothman, Steve R.</u> - 11/4/1999	<u>Rep Sanders, Bernard</u> - 1/31/2000
<u>Rep Saxton, Jim</u> - 9/30/1999	<u>Rep Stark, Fortney Pete</u> - 10/18/1999
<u>Rep Thompson, Bennie G.</u> - 10/6/1999	<u>Rep Vento, Bruce F.</u> - 9/30/1999
<u>Rep Weygand, Robert A.</u> - 9/30/1999	<u>Rep Woolsey, Lynn C.</u> - 10/1/1999

Justin

*2667 - Mercury specific - comprehens,
PP provisions, coal cement, Hg recycling*

2980 - Power plant specific

Bill Summary & Status for the 106th Congress

(Updated List)

Item 1 of 1

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H.R.2900

Sponsor: Rep Waxman, Henry A. (introduced 9/21/1999)

Latest Major Action: 10/8/1999 Referred to House subcommittee

Title: To reduce emissions from electric powerplants, and for other purposes.

COSPONSORS(88), ALPHABETICAL [followed by Cosponsors withdrawn]: (Sort: by date)

—Rep Ackerman, Gary L. - 11/15/1999	Rep Andrews, Robert E. - 3/15/2000 D-NJ
—Rep Baldacci, John Elias - 10/20/1999	Rep Baldwin, Tammy - 2/15/2000 D-WT
D-CA Rep Becerra, Xavier - 3/15/2000	Rep Berkley, Shelley - 1/31/2000 D-NV
—Rep Berman, Howard L. - 11/18/1999	Rep Blumenauer, Earl - 1/31/2000 D-OR
—Rep Boehlert, Sherwood L. - 9/21/1999	Rep Campbell, Tom - 3/15/2000 R-CA
D-MA Rep Capuano, Michael E. - 3/23/2000	Rep Carson, Julia - 3/23/2000 D-CA
D-NY Rep Crowley, Joseph - 3/23/2000	Rep Davis, Danny K. - 1/31/2000 D-IL
D-OR Rep DeFazio, Peter A. - 3/15/2000	Rep DeGette, Diana - 1/31/2000 D-CO
—Rep DeLauro, Rosa L. - 9/21/1999	Rep Dixon, Julian C. - 3/1/2000 D-CA
D-NY Rep Engel, Eliot L. - 3/15/2000	—Rep Eshoo, Anna G. - 10/18/1999
R-IL Rep Evans, Lane - 4/5/2000	—Rep Farr, Sam - 9/21/1999
D-PA Rep Fattah, Chaka - 1/31/2000	—Rep Filner, Bob - 11/18/1999
D-MA Rep Frank, Barney - 2/7/2000	—Rep Gejdenson, Sam - 10/18/1999
R-MD Rep Gilchrest, Wayne T. - 3/23/2000	Rep Gilman, Benjamin A. - 1/31/2000 R-NY
—Rep Gutierrez, Luis V. - 10/18/1999	Rep Hastings, Alcee L. - 3/1/2000 D-FL
—Rep Hinchey, Maurice D. - 9/21/1999	Rep Hoeffel, Joseph M. - 1/31/2000 D-PA
D-NJ Rep Holt, Rush D. - 3/1/2000	Rep Hooley, Darlene - 3/1/2000 D-OR
—Rep Jackson, Jesse L., Jr. - 9/21/1999	—Rep Johnson, Nancy L. - 11/17/1999
D-CA Rep Jones, Stephanie Tubbs - 3/1/2000	—Rep Kennedy, Patrick J. - 9/21/1999
—Rep Kilpatrick, Carolyn C. - 10/18/1999	Rep Kucinich, Dennis J. - 9/21/1999
—Rep Lantos, Tom - 9/21/1999	—Rep Larson, John B. - 10/27/1999
—Rep Lewis, John - 9/21/1999	Rep Lowey, Nita M. - 2/7/2000 D-NY
D-NY Rep Maloney, Carolyn B. - 2/15/2000	Rep Maloney, James H. - 3/23/2000 D-CT
Rep Markey, Edward J. - 2/15/2000	Rep Martinez, Matthew G. - 2/15/2000 D-CA
D-CA Rep Matsui, Robert T. - 4/5/2000	Rep McCarthy, Carolyn - 4/5/2000 D-NY
D-WA Rep McDermott, Jim - 3/1/2000	—Rep McGovern, James P. - 9/21/1999
—Rep McKinney, Cynthia A. - 9/21/1999	Rep McNulty, Michael R. - 2/15/2000 D-NY
—Rep Meehan, Martin T. - 10/27/1999	Rep Meeks, Gregory W. - 4/5/2000 D-NY
D-NJ Rep Menendez, Robert - 3/23/2000	Rep Millender-McDonald, Juanita - 3/15/2000 D-CA
—Rep Miller, George - 10/18/1999	Rep Moakley, John Joseph - 4/5/2000 D-MA
—Rep Moran, James P. - 9/21/1999	—Rep Nadler, Jerrold - 10/18/1999

D-C A	Rep Napolitano, Grace F. - 2/15/2000	Rep Norton, Eleanor Holmes - 4/5/2000	D-C
	Rep Olver, John W. - 9/21/1999	Rep Owens, Major R. - 3/15/2000	D-NJ
	Rep Pallone, Frank, Jr. - 11/15/1999	Rep Payne, Donald M. - 3/1/2000	D-NJ
D-NJ	Rep Rangel, Charles B. - 3/15/2000	Rep Rothman, Steve R. - 3/15/2000	D-NJ
	Rep Roybal-Allard, Lucille - 2/15/2000	Rep Rush, Bobby L. - 4/5/2000	D-IL
D-C A	Rep Sanchez, Loretta - 3/23/2000	Rep Sanders, Bernard - 11/16/1999	
	Rep Schakowsky, Janice D. - 9/21/1999	Rep Serrano, Jose E. - 4/5/2000	D-NJ
R-C T	Rep Shays, Christopher - 1/31/2000	Rep Slaughter, Louise McIntosh - 3/15/2000	D-NJ
	Rep Smith, Adam - 3/1/2000	Rep Smith, Christopher H. - 11/15/1999	R-NJ
D-C A	Rep Stark, Fortney Pete - 1/31/2000	Rep Tauscher, Ellen O. - 3/1/2000	D-C A
D-NJ	Rep Towns, Edolphus - 1/31/2000	Rep Udall, Mark - 3/1/2000	D-NM
D-NJ	Rep Velazquez, Nydia M. - 3/23/2000	Rep Vento, Bruce F. - 9/21/1999	
	Rep Weiner, Anthony D. - 10/18/1999	Rep Woolsey, Lynn C. - 3/23/2000	D-C A