NWPPA

Northwest Public Power Association

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COMMENTS OF

THE ENVIRONMENTAL TASK FORCE OF THE NORTHWEST PUBLIC POWER ASSOCIATION

TO

THE ADVANCED NOTICE OF PROPOSED RULE-MAKING REASSESSMENT OF USE AUTHORIZATIONS FOR POLYCHLORINATED BIPHENYLS (PCBS) 75 Fed. Reg. 17645 (April 7, 2010)), Docket No. EPA-HQ-OPPT-2009-0757

August 20, 2010

Environmental Task Force ANPRM Polychlorinated Biphenyl Project

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August 20, 2010

Document Control Office (7407M)
Office of Pollution Prevention and Toxics (OPPT)
Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, D.C. 20460-0001

Re: *Comments of the NWPPA Environmental Task Force to the ANPRM on Reassessment of Use Authorizations for PCBs Docket No. EPA-HQ-OPPT-2009-0757*

Dear Sir or Madam:

I. INTRODUCTION

On April 7, 2010, the U.S. Environmental Protection Agency (EPA) published an Advanced Notice Proposed Rule-Making (ANPRM) seeking comments on Reassessment of Use Authorizations for Polychlorinated Biphenyls (PCBs) at 75 Fed. Reg. 17645.

The April 7, 2010 ANPRM is a large, complex document reassessing the continued use, distribution in commerce, marking and storage for reuse of liquid PCBs in electric and non-electric equipment. EPA is proposing complex regulatory change for electric utilities including regulation of non-liquid PCBs (NLPCBs).

The ANPRM is divided into sixteen (16) units by Roman numerals which are again sub-divided. The objective of the ANPRM is to "reassess the current use authorizations for certain PCB uses to determine whether they now pose an unreasonable risk to human health and the environment." (page 17650). EPA sets out various reasons for tightening PCB use, eliminating use (in some cases), and tightening storage for reuse of PCBs and PCB items.

EPA appears to be considering lowering the long-standing 50 ppm PCB level for certain PCB activities. EPA suggest that service and storage for reuse be limited to Non-PCB electrical equipment (>50 ppm PCB) and potentially phase out use of equipment above that level. Additionally, requirements for marking and labeling of PCB electrical equipment are suggested and the EPA is considering identifying and testing PCB capacitors, even very small capacitors with as little as 1.7 ounces of fluid, instead of the long-standing three (3) pounds of fluid. Capacitors cannot be sampled without destroying the electrical integrity of the unit.

EPA, since issuing the Rule for Disposal of Polychlorinated Biphenyls (Mega Rule) in 1998, still fails to fully understand day-to-day operational activities at electric utilities. The result is proposed regulations which are costly, unproductive, and which have the unintended consequence of diverting resources away from the ongoing disposal of electrical equipment

containing PCBs. To be meaningful and effective, EPA needs to develop a regulation after full consultation of all stakeholders, including electrical equipment manufacturers, electric utilities and EPA Regional Offices.

The ETF requested EPA personnel for the last two years to participate in rule development, to no avail. The result is that EPA's regulation process lacks transparency as required by EPA Administrator Lisa Jackson's memorandum issued in April of 2009. Instead of proposing a regulatory system which builds on past successes in disposing of PCB electrical equipment, the ANPRM suggests a cumbersome process which will impede disposal of equipment containing PCBs.

Finally, EPA's Request for Comments and Additional Information (page 17659)[1] in Unit XIV are extensive and difficult for most utilities to respond to. The ETF believes that the EPA already has much of the information requested.

A. Northwest Public Power Association

The Northwest Public Power Association (NWPPA) is an electrical utility trade association formed in 1940 representing over 160 publicly-owned electric utilities, electrical cooperatives, and municipalities and associate members comprised of several northwest investor-owned utilities (referred to as "utilities") located for the most part in the Western United States, Alaska and Canada.

NWPPA is dedicated to serving the interests of its members and their millions of public electric utility customers. NWPPA provides extensive training and educational opportunities for electrical utility employees as well as public information, communications, Federal legislative coordination, survey data, and networking opportunities and access to products and services for the electric utility industry.

NWPPA has continuously been an advocate for public power on behalf of its member utilities. Over 20 years ago, NWPPA created the Environmental Task Force (ETF) to respond to increasing environmental regulation of publicly-owned electric utilities.

B. Environmental Task Force

These comments to the ANPRM, Reassessment of use Authorizations for PCBs, have been developed by the NWPPA's ETF members[2]. The ETF was created in 1980 to establish educational opportunities and communications between public electric utilities, EPA and state regulators. The ETF is a hands-on regulatory compliance and educational working group composed of environmental officers and personnel from member utilities who have decades of experience in meeting the environmental and health and safety requirements at Federal, state and local levels.

[1] Page numbers refer to 75 Fed. Reg. 17645 (April 7, 2010) Advanced Notice of Proposed Rule Making.

[2] These comments represent the views of the ETF as approved by its Policy Committee and not the views of individual members or of individual electric utilities.

In short, ETF members work day-to-day with electrical equipment containing PCBs at all levels of the electrical utility industry. ETF members write the permits, arrange for disposal of hazardous waste, dispose of electrical transformers, other electrical equipment and do the day-to-day work of managing utilities' environmental compliance. The ETF meets regularly with environmental regulators, consultants and vendors including EPA Region 10 personnel. ETF members are well-qualified to comment on the ANPRM and its impacts on public electric utility environmental compliance efforts.

II. SUMMARY OF ENVIRONMENTAL TASK FORCE'S POSITION

ETF's comments establish that the proposals in the ANPRM will have significant unintended consequences. Following is a summary of key ETF points:

- Most electric utilities have removed a significant percentage of PCB-containing electrical equipment from service over the last two decades and are continuing to do so. EPA should acknowledge this significant success and build on it.

- EPA, at least at the national level, seems unaware of the historic removal and disposal of PCB equipment from service by electric utilities. This massive removal and disposal of PCB transformers and electrical equipment has significantly reduced the risk of human exposure or environmental damage thoroughly undercutting EPA's rationale for new rules.

- EPA's suggested regulatory changes, which add unneeded cost to electric utilities, threaten the safety of workers, and would require an increase in electrical outages, which are contrary to Federal Energy Regulatory Commission (FERC) reliability standards.

- EPA suggests additional testing of electrical equipment in spite of the fact that electrical utilities have for years repeatedly told EPA that additional testing is an obstacle to the accelerated PCB reduction (Attachment A, July 22, 2003 EPA document on PCB Phase Down Program p. 5). In many cases, testing cannot be done without destroying the equipment being tested.

- EPA's rulemaking does not appear to have been coordinated with the Federal Energy Regulatory Commission (FERC) and North American Electric Reliability Corporation (NERC) outage and shortage requirements in developing the ANPRM.

- The new national electrical transmission grid reliability concerns and requirements make it increasingly difficult for electric utilities to get permission to cause an outage or shortage, which will be necessary to comply with EPA's proposals.

- The ETF is concerned that EPA has not discussed the impacts of the ANPRM proposals with FERC or NERC. The ANPRM conflicts with FERC guidelines and rulemakings because it will result in increased shortages and reduced reliability.

III. EPA PROPOSALS WILL HAVE NEGATIVE UNINTENDED CONSEQUENCES

The EPA proposal, if adopted, will have unintended consequences of delaying progress in PCB removal and destruction. The ETF believes there are more efficient methods to reduce or eliminate PCB use at electric utilities.

Some examples of unintended consequences are:

- Sampling and labeling requirements will stress scarce and costly resources without matching benefits.

- The fixed date requirements to remove equipment ignores significant lead time to acquire new equipment from manufacturers.

- The large number of outages required to test or remove equipment is not reasonable given a utility's requirement to serve loads and to ensure adherence to existing and proposed NERC/FERC reliability requirements.

- Diversion of limited utility resources – many NWPPA members are small utilities serving large geographic areas. To require a crew to be dedicated to testing and removal may mean that one-half of the utility's crew strength is unavailable for maintenance and construction work required to meet customer service requirements or WECC/NERC/FERC reliability standards and requirements.

IV. ETF RECOMMENDS A REINVIGORATED ACCELERATED REMOVAL OF PCB PROGRAM

ETF recommends that EPA's Voluntary Accelerated Removal (VAR) program be revived and enhanced to build on the success of individual electric utilities. The VAR program was, for the most part, limited to EPA Regions 9 and 10. It was a successful program for eliminating PCBs. EPA Headquarters need to review and revive the VAR program.

The ETF suggests that EPA authorize electrical utilities, in each EPA Region, to be grouped by size – small, medium, large. Each electric utility would develop an agreed to program with the EPA Region to implement a PCB use reduction/removal program over a five (5) to ten (10) year agreed to period. This program would be approved by the EPA Regional Office and implemented by the electric utility. The goal would be to develop an enforceable VAR program.

This type of VAR program will build on the historic success of electric utilities in removing from service PCB electrical equipment by allowing individual electric utilities and Regional EPA Offices to develop PCB use reduction/removal plans. Each utility (whether small, medium or large) would develop the PCB use reduction plan in conjunction with the regional EPA office to accelerate disposal of PCB equipment no longer in service. This approach would allow utilities to avoid the unintended consequences of the current proposal: namely, outages, lost revenue and system reliability concerns.

V. EPA'S REASONS FOR REASSESSING PCB RULES ARE NOT BASED ON VALID DATA

A. Introduction

EPA's rational for issuing the ANPRM is set out in Unit V (p. 17650). EPA asserts that a new, more restrictive regulation is needed to reduce use of PCB transformers and electrical equipment because among other items:

1) transformers and electrical equipment are aging, subject to attrition, and now pose a threat to human health and the environment requiring their elimination as soon as possible;

2) international treaties encourage rapid reduction;

3) disposal and cleanup costs will increase making earlier disposal more efficient;

4) insurance costs will increase;

5) hazard assessments mandate PCB use reduction;

6) risk of PCB substitute materials;

7) updating information on release of PCBs; and

8) high risk of food contamination from spills of PCB-containing oils.

Contrary to EPA assertions, the ETF believes that the overall threat posed by PCB-containing electrical equipment is lower than when TSCA was first passed because the highest level PCB equipment has been largely removed from electrical systems. The extraordinary efforts of electric utilities to remove enormous amounts of PCB containing electric equipment over the last two decades have been successful.

These comments establish that the current electric utility disposal program meets international obligations. EPA's assertion that rising disposal costs and rising insurance costs justify phase-out of PCB electrical equipment is not fact based.

EPA's "hazardous assessment" of continued use of PCBs is invalid because there are significantly less PCBs now in "use" than there were ten years ago, and there will be less in "use" in another ten years. The health risk EPA addresses in the ANPRM (p. 17651) is going away. The following paragraphs B, C, D, and E establish the lack of basis for the ANPRM:

B. Attrition and Aging of Equipment does not Cause Spills

EPA correctly states that most recently manufactured PCB-containing equipment may be nearing the end of its expected useful life. EPA asserts that a transformer's useful life is "typically no more than 30-40 years" (p. 17650). However, EPA's erroneously goes on to conclude that older equipment is "increasingly vulnerable to leaks the older it becomes." The age of electric equipment is not synonymous with a predicted number of PCB releases. NWPPA

utility members routinely replace vintage high voltage equipment for reasons other than leaks. For example, older, still working high voltage electrical equipment is often replaced because of outdated fittings, higher efficiency of new equipment or reliability/power constraints or poor electrical performance. Additionally, as replacement parts become more difficult to locate, older working equipment is taken out service and replaced with new equipment or, if seals on untested oil-filled equipment or PCB containing equipment are failing, the industry either replaces or retro-fills this equipment.

EPA assumption that old electrical equipment is leaking or is about to leak is not accurate. Old equipment, well-maintained, can last many decades longer. For example 57% of one large member utility's equipment is older than 40 years. Currently, electric utilities are destroying PCBs equipment removed from service after it has served its useful life. This is a cost efficient and immensely successful program.

EPA's proposed time frame to remove vintage electrical equipment (p. 17653) is not supported by logic. Electric utilities already remove any leaking or potentially leaking equipment regardless of age. Useful life is defined differently for individual pieces/types of oil filled equipment and cannot be determined by a blanket age base or number of years of operation. Older equipment is removed at the end of its useful life. Removing aging equipment from service on an EPA deadline to destroy PCBs is unnecessary and will interfere with ongoing transformer and electrical equipment maintenance and removal programs at electric utilities.

C. International Agreements are being met

EPA asserts that compliance with international treaties such as the Stockholm Convention on Persistent Organic Pollutants justifies the ANPRM (p. 17651). This is not true. EPA's June 5, 2003 Memorandum "Voluntary Accelerated Removal (VAR) Program summary (Attachment A at p. 2) states: "Voluntary reduction goals also relate to actions and intents expressed under the three following international agreements." This means that the VAR program in 2003 met international treaty requirements.

Current disposal programs regarding transformers and electric equipment containing PCBs continues to meet or exceed international obligations. There are no provisions the Stockholm Convention or Persistent Organic Pollutants (POPs) Treaty that mandate more EPA regulations.

D. EPA's Hazard Assessment of PCBs Spills is Exaggerated

EPA Hazard Assessment (pp. 17651 and 17654) assumes an increased rate in spills containing PCBs. EPA states that it contacted the National Response Center (NRC) to find out how many PCB spills were reported (p. 17651). The NRC advised EPA that there were 5,578 releases associated with PCBs from 1990 to August 19, 2009.

This data on spills is inaccurate because it includes spills not required to be reported under EPA's reportable quantity requirement for PCBs released to the environment. EPA's reporting requirement for PCB spills is one pound or more by weight. However, state and local regulations often have more stringent (lower quantity) spill reporting criteria. The reason is that

states are collecting data for reasons other than meeting PCB spill reporting regulations. In California for instance, any released oil with PCB concentrations greater than or equal to 5 parts-per-million is considered a hazardous waste and is reported. The California Office of Emergency (OES) Services and several local agencies state the following: "All significant releases or threatened releases of a hazardous material, including oil and radioactive materials, require emergency notification to government agencies." (OES Spill/Release Notification Guidance).

To ensure compliance with federal spill reporting guidelines, state emergency responders encourage reporting of even minor releases to the NRC, even if they are below reportable quantities. This means that the spill data from the National Response Center is overstated.

The NRC data process inflates EPA's number of reported PCB releases, it provides emergency responders with the ability to mobilize and coordinate spill response personnel as needed. The increased NRC spill reporting and data demonstrates a pro-active response by organizations managing PCB spills not a high risk to the environment.

NRC's spill reporting data (e.g. the concentration and volume of PCBs released) is inaccurate and inflated. EPA should not correlate increases in PCB spills/releases with higher failure rates of aging PCB equipment or with higher hazard assessments to human health or the environment.

NWPPA member utilities, when asked by the ETF members, stated that it was rare to have a release from PCB equipment at or above a reportable quantity. Additionally, since most utilities have removed or are in the processes of removing PCB equipment from their distribution and transmission systems the number of potential spills involving PCBs is decreasing as is the risk of spills.

E. Disposal Costs and Insurance Costs not Increasing

During the last twenty (20) plus years, the electrical utility industry has systematically removed PCBs and PCB-contaminated equipment from its transmission and distribution infrastructure. Since the early 1980s, utilities sent PCB contaminated equipment to licensed landfills, recyclers, and incinerators throughout the nation. During this time, disposal companies constructed and permitted sophisticated recycling facilities.

Many smaller utilities have sampled and removed all PCB containing equipment from their electrical systems. Larger utilities have also removed a significant amount of PCB and PCB-contaminated equipment, and continue to do so, while replacing equipment when identified during maintenance activities. Overall, these efforts have resulted in the removal of a large volume of PCB and PCB contaminated electrical equipment from electrical systems.

ETF member experience indicates that disposal companies have landfill capacity and are reducing pricing for landfill, recycling, and incineration of PCB equipment. Moreover, the increase in the metals commodities market, electrical equipment disposal and recycling companies have developed EPA-approved recycling technologies to de-chlorinated oil and recycle treated and recycled electrical equipment.

ETF members interviewed two nationwide waste disposal companies and were told that landfill capacity for PCBs is readily available over the next several decades. Due to increased commodity prices in steel, copper, and brass, the electrical equipment recycling capabilities have also expanded. The availability of PCB disposal options will continue to support utility recommendations to continue with their PCB voluntary accelerated removal programs. ETF members also could find no indication of increasing insurance rates for electric utility systems still containing PCBs. In fact, insurance rates seem to be declining.

The ETF recommends that EPA act to increase disposal capacity by simplifying the permitting requirement. For example, a disposal facility with a Resource Conservation and Recovery Act (RCRA) permit for hazardous waste should not be required to obtain a separate Toxic Substances Control Act (TSCA) permit for PCB waste disposal.

VI. ELECTRIC UTILITIES HAVE PROPERLY DISPOSED OF MASSIVE AMOUNTS OF PCB EQUIPMENT

During the past thirty (30) years, electric utilities have disposed of hundreds of thousands of pieces of PCB contaminated equipment from their distribution and transmission facilities (see Attachment B which is an estimate of material removed by a few NWPPA members). Substantial amounts of electrical equipment have been removed since development of the PCB Mega Rule in 1998. The removal process consists of the identification of PCB equipment, testing (if possible), risk assessments, and equipment removal and disposal. As part of electric utility risk reduction efforts, PCB equipment was removed from high risk sensitive areas that include animal feedlots, schools, food processing plants, and public institutions. Utilities continue to voluntarily remove PCB equipment as it is identified during maintenance activities, and as part of ongoing PCB equipment removal liability reduction programs. Most of the removed PCB and PCB contaminated equipment is replaced with equipment that contains PCBs in concentrations less than 49 parts per million.

A mandated phase-out of PCB electrical equipment is unnecessary as phase-out is already occurring and is continuing in the future. Attachment B is extensive documentation of electrical PCB-containing equipment removed by NWPPA members during the last two decades.

A. Nationally Reduction in Use and Destruction of PCB Transformers and Electrical Equipment is Significant and On-Going

Attachment C is a "2006 Update" from the Utilities Solid Waste Activities Group (USWAG) summarizing member utility PCB reduction efforts. USWAG represents approximately 80 individual electric utilities and energy companies. The Report summarizes the very significant PCB equipment reductions. USWAG describes the wide-range of voluntary PCB reduction efforts in the United States. USWAG notes that continuing PCB reduction efforts are significant and demonstrate that the United States is fulfilling its obligation under the Stockholm Convention. For example, at page 2, the 2006 Update states that American Electric Power (AEP) has no known PCB transformers or large PCB capacitors within the Great Lakes Basin. AEP has destroyed a very significant number of PCB items and large capacitors. Similarly, a significant amount of PCB electrical equipment was removed by Arizona Public Service, Detroit Edison and Duke Energy. The 2006 Update, easily located on the internet,

shows the very significant efforts made by electric utilities throughout the United States reduced PCB use. The ETF's own research (Attachment B) confirms the massive reduction in PCB equipment. For example, one member utility (BPA) removed over 100,000 PCB capacitors at a cost of over $100,000,000 and was recognized by EPA Region 10 for this effort.

B. The ETF Data Confirms PCB Reduction Efforts by NWPPA Members

Attachment B includes a spreadsheet prepared by the ETF from member of information regarding disposal of PCB electrical transformers and other PCB equipment at their end-of-service -life. In fact, many ETF members are PCB free throughout their electrical systems.

The ETF analysis goes a step further than the earlier USWAG report by analyzing plans for future destruction of PCB electrical transformers and equipment. Electric utilities are making significant reductions by destroying distribution equipment at a rate of approximately 4% per year. Electric utilities are committed to removing all PCB containing equipment (50 ppm PCB or greater) by 2025. This process is ongoing. Below is a spreadsheet summarizing data on disposal from a few ETF members. The amount disposed is significant.

NWPPA Inventory Request
for the Advanced Notice of Rule Making

5/20/10

Dark gray cells will be calculated for you. You do not need to enter anything into them

	PPM	Age	Disposed	Total
Inventory PPM Analysis:				
Number of transformers and electrical equipment >500 ppm				1,515
Number of transformers and electrical equipment 50 - 499 ppm				26,562
Number of transformers and electrical equipment 2 - 49 ppm				181,134
Number of transformers and electrical equipment <2 ppm				525,810
Total Number of Transformers/Electrical Equipment in Inventory				*735,021*
Inventory Age Analysis:				
Number of transformers and electrical equipment 50 years old				2,488
Number of transformers and electrical equipment 40 years old				1,731
Number of transformers and electrical equipment 30 years old				127,621
Total Number of Transformers/Electrical Equipment older than 30 years.				*131,840*
Inventory Disposal Analysis:				
Number of transformers disposed of in the last 30 years.				210,072
Approximate number of transformers and electrical equipment >50 ppm you are planing to dispose of in the next 10 years.				66,595

The ETF calculations show that about 96% of transformers of < 49 ppm PCB. That 72% of transformers are < 2 ppm and that 18% of transformers are greater than 30 years old. ETF estimates that compared with the total inventory about 30% of all transformers have been disposed of, and all replacements are < 2 ppm PCB. Data obviously varies by utility. The important part is the massive disposal of PCB containing equipment.

C. Ongoing PCB Use Phase-Out Undercuts ANPRM Rational

As ETF and USWAG data indicate, the basic rationale for the ANPRM is not supported by data. What is happening is that the risk of public exposure to PCBs is being greatly reduced and will continually be reduced because the equipment containing PCBs is being destroyed at a rapid rate and without additional regulations.

VII. EXTENSIVE TESTING OF ELECTRICAL EQUIPMENT IS IMPRACTICAL, UNSAFE AND NOT POSSIBLE FOR HERMETICALLY SEALED EQUIPMENT AND WILL VIOLATE FERC SYSTEM RELIABILITY STANDARDS

EPA seems to be requiring testing and retesting of equipment with ≤ 50 ppm PCBs. This means that electric utilities may need to retest equipment and test more categories of equipment. Most utilities are currently replacing tested or assumed ≥ 50 ppm PCB equipment based on attrition and maintenance schedules and planned reduction programs. The time and expense of locating, testing or retesting, and marking equipment which will be replaced under existing programs is of questionable value. It amounts to a distraction from disposal. Some equipment is located in difficult to reach areas and will require outages to conduct, which are not easily obtained due to system reliability standards and could violate the FERC and the NERC requirements. The ETF believes that EPA's program will be costly, create worker safety issues, and interruptions of electrical service during any testing or retesting program.

A. Portions of EPA's ANPRM seem to Conflict with FERC Requirements

ETF believes that the EPA has not discussed impacts of the ANPRM with FERC. ETF's view is that the ANPRM, if adopted, will reduce system reliability and subject NWPPA members to civil penalties for reliability violations. Attachment D is a FERC news release of a Notice of Proposed Rulemaking to Mandate Reliability Standards for Electric Utilities. Some of EPA's proposals seem directly contrary to FERC reliability standards.

The ETF recommends that EPA consult and coordinate this rulemaking with FERC and NERC.

B. Retesting Requirements see to Punish Electric Utilities Which have Acted in Good Faith

Retesting requirements being suggested by EPA will effectually punish electric utilities which have already tested their systems. Electrical utilities which have eliminated all transformers or electrical equipment with greater than 50 ppm PCBs will be forced to retest.

Most utilities have been testing dielectric fluids in electrical equipment since the 1980s (p. 17,653). At that time, EPA established that a detection limit of 2 ppm PCBs. Also, many laboratories do not report results of less than 2 ppm. EPA, by seeking information on the population equipment containing 1 ppm or higher PCBs, undercuts electric utilities which have successfully tested their electrical systems and invalidating years of costly testing efforts.

Moreover, EPA needs to consider the difficulty, and perhaps the impossibility of making a determination with test results being reported as less than 2 ppm PCBs. The cost and difficulty

of retesting everything already tested or labeled on the nameplate as ≤ 2 ppm will be a costly distraction preventing electric utilities from removing for disposal higher concentration equipment.

The ETF recommends that EPA propose a regulation which does not penalize electric utilities which have voluntarily tested and eliminated equipment found to contain ≥ 50 ppm PCBs. These efforts of electric utilities which have spent millions of dollars and countless man hours need to be recognized. The EPA should recognize prior voluntary efforts before it shifts the target for testing as suggested in the ANPRM.

C. EPA's Proposals are Unsafe for Utility Workers

Additionally, the ETF believes that the inventory-wide testing requirement and phase-out suggested by EPA will result in an increase of safety risk to workers. ETF members know from decades of experience that injuries are sustained while accessing hard to reach energized equipment. There is a significant potential for worker fatalities from the testing energized equipment. **The ETF recommends that EPA recognize that utilities have limited personnel to conduct sampling.** Many utilities which have already tested equipment should not be forced to reutilize its workforce to gain information which has already been gained.

VIII. TESTING OF SMALL CAPACITORS/BUSHINGS IS IMPRACTICAL

The ETF believes that testing small capacitors and bushings will be very expensive, destroy equipment and ultimately be futile (p. 17659). **The ETF recommends that EPA assess the financial impact on currently unregulated and uneducated non-utility businesses that could possess PCB small capacitors (homeowners, small, medium and large commercial entities, radio and TV transmitter, etc).** ETF believes there is little environmental value to be attained by the proposed testing.

EPA's proposal is surprising because EPA has been repeatedly told by electric utilities that extensive testing will delay disposal of transformers and PCB equipment by directing electric utility resources into testing. EPA's notes from the VAR PCB phase-down program are clear.

> "When asked to identify obstacles to accelerated PCB reduction, utilities most often mention the cost of implementing a program to individually de-energize, sample, send the sample to PCB testing, etc. Testing cost was identified as the most challenging barrier because of the after significant commitment of trained human resources and capital to investigate millions of pieces of equipment." (Attachment A, p.5)

Testing also has the potential to create power shortages in violation of the FERC and NERC requirements. EPA needs to coordinate its rulemaking with FERC and NERC reliability requirements. EPA needs to recognize that NERC and FERC as regional reliability requirements make it difficult for utilities to have outages or to take down their electrical systems to conduct testing.

IX. REGULATION OF 1.7 OZ EQUIPMENT IS UNENFORCEABLE

EPA's proposed broader definition of "PCB articles" to include equipment containing ≥ 0.05 liters or approximately 1.7 fluid ounces of dielectric fluid with ≥ 50 ppm PCBs will unenforceable and create a management nightmare for utilities, general industry and EPA (pp. 17658-17654). There is an unknown, but huge number of small capacitors and equipment, such as electro-mechanical relays, throughout the United States in industries, such as telecommunications and non-power related devices and household appliances, such as microwave ovens. The amount and location of these items is not known and can not be easily determined as they are often buried or installed with the inner workings of larger pieces of equipment which cannot be easily located or tested. The cost and practical implications to implement this element of the Stockholm Convention is staggering and go well beyond the universe of the utility industry, even to homeowners. **The ETF recommends that this provision be dropped**.

A. Small Capacitors used Extensively in American Industry

Small capacitors, including those that contain PCBs, are extensively used throughout the electric utility and other industries such as communication, manufacturing, and any industry that uses electrical equipment. There is extensive use of small capacitors as starter ballasts in private and municipal street lighting and area lighting applications. The small capacitors tend to have a long life with no need for routine maintenance. Most electric utilities (and other equipment owners) are unaware of the location of all small capacitors in their systems. Frequently, small capacitors are purchased as part of a larger piece of equipment (street lights, electrical relays, motor starters) and no attention is paid to the individual electrical components.

It is impossible for utilities to identify the location of all small capacitors within their systems. It is likely as difficult for any other industrial sector. It is impossible to determine if the dielectric fluid in a capacitor is PCB unless the manufacturer has provided some notation on the exterior of the equipment that indicates year of manufacture and/or type of dielectric fluid. Since most small capacitors are sealed, it is impossible to sample the dielectric fluid without destroying the capacitor and risking release of the dielectric fluid.

B. ETF Recommendations for Small Capacitors

ETF recommends:

First, that EPA continues to treat PCB small capacitors as they are under the current regulations. EPA should exempt small capacitors them from most regulatory requirements as long as they are intact/non-leaking, placed in DOT containers, and disposed according to TSCA and/or RCRA.

Second, that EPA initiate a process of determining the universe of equipment containing ≥ 1.7 fluid ounces of dielectric fluid before considering changes in the definition of a PCB article. Our understanding is that EPA is aware that it has not quantified the extent of the universe of capacitors in small electrical equipment.

Third, that EPA clarify how an owner is to verify if equipment contains ≥ 1.7 fluid ounces without destroying it.

Fourth, that EPA recognize that even when a small capacitor is identified as containing ≥ 1.7 fluid ounces, there are no clear visual clues or identification as to the age of the capacitor. The only solution is to either assume all small capacitors to be PCB filled, or test and destroy them.

The ETF believes that EPA does not understand that changing the definition of "PCB articles" to include all equipment containing 1.7 fluid ounces or more of dielectric fluid (page 17658) will dramatically increase the universe of regulated equipment and sweep in many industries and businesses which are not currently covered.

X. MARKING PROPOSALS WILL DISTRACT UTILITIES FROM DISPOSAL PROGRAM

Marking all known PCB equipment with ≥ 50 ppm PCBs while utilities are working to remove from service and properly dispose of the same equipment makes no sense (p. 17659). Marking will require extensive testing and will be extremely expensive diverting money and effort away from disposal of PCB equipment. EPA's justification appears to be "community right to know."

The new marking requirement for untested electrical equipment puts an undue burden on electric utilities. EPA proposes no time frame for compliance with this potential rule. Does this mean it will be in effect at the time of publication?

In addition, while utilities regularly change out transformers when they fail, resulting in a reduction of PCBs, there are still thousands of transformers in the distribution areas which are untested and will require a PCB sticker under this proposal. The labor involved in reconciling which transformers are untested, where in the system they reside, and sending out a line crew(s) to place stickers where they are likely to fade is not in anyone's best interests. Marking transformers in the thousands does nothing to reduce the level of PCBs in the field. Finally, very few of the population of transformers in the field leak. Leaks are usually caused by damage from cars hitting poles or trees falling in storms.

From a community right to know standpoint, the marking requirement would be misleading because most of the transformers which would be required to be marked would not contain PCBs >50 ppm. Marking them would cause undue citizen alarm where there is no cause. Transformers which are untested in the event of a spill are immediately tested by a laboratory on call 24 hours per day. Testing of the oil itself can usually be accomplished within one hour once it is at the laboratory.

The ETF recommends that an electrical utility's finances are better expended in removing and destroying PCB transformers and electrical equipment from service at the end of their life than to spend money in a constant effort to mark equipment throughout their networks. Requiring PCB contaminated equipment to be marked does not recognize that much utility equipment is suspended in air and virtually all of it is energized to high voltages.

To require workers to inspect, verify nameplate information, test, and attach marks in variable weather conditions is unsafe and unreasonably expensive. It makes no sense. Similarly, increasing inspection frequency from quarterly to monthly for PCB equipment is impractical for mobile locations where many ETF members are and dangerous in the areas of extreme weather such as mountains in northern locations. EPA does not seem to recognize how many sites are inaccessible for months at a time. **The ETF recommends that this provision be dropped.**

XI. EPA TIMELINES FOR DISPOSAL WILL DISTRACT ELECTRIC UTILITIES FROM DISPOSAL PROGRAMS EFFORTS

EPA's proposed timetables to complete removal of PCB equipment from service are not needed and will interfere with ongoing disposal efforts (p. 17653). Many NWPPA members have already complied with these timelines while others are rapidly reducing PCB equipment on different schedules. Some utility members are PCB free. EPA should officially recognize and support these disposal efforts by allowing utilities to continue voluntary removal and replacement of electrical equipment.

The ETF believes that encouraging the efforts of electric utilities to dispose of and destroy PCB transformers and electrical equipment is the appropriate way for the EPA to achieve its goal. Proposed timetables make no sense because the dates do not reflect that equipment will remain in use for longer than the timetable. This is a case where a one size fits all rule is a bad idea. When the equipment's life expectancy is completed it will then be phased down and destroyed. **The ETF recommends that EPA not set dates to comply with treaties not yet ratified by the U.S. Senate**. Enormous amount of equipment and millions of dollars have been spent in making electric utilities PCB free. There is no need for additional deadlines EPA only needs to encourage and incentivize utilities to continue to remove transformers and electrical equipment containing PCBs.

XII. EPA SHOULD NOT CHANGE THE LEVEL OF DETECTION FOR PCBS IN OIL

Any reduction in the quantifiable level or level of detection could cause serious harm to progressive utilities that previously implemented programs to identify, remove, and properly dispose of regulated PCB equipment. For example, Tacoma Power, an NWPPA member, implemented such a program in 1992. The details of the program are that approximately 20,000 transformers were sampled in place at a cost in excess of $2,000,000. Approximately 750 transformers with >45 ppm PCB were replaced and properly disposed by 1998 at a cost of approximately $2,500,000. All remaining equipment has a known PCB concentration <45 ppm as a result of sampling or manufacturer's certification (1982 manufacture date, or later). All transformers containing 2 ppm PCB or greater are removed from service and disposed according to TSCA whenever they are returned to the service center for any purpose, resulting in a gradual reduction of equipment containing detectable PCBs in a manner that does not create an economic burden. Tacoma Power currently has 2383 transformers in use that contain detectable PCBs less than 45 ppm. It is not currently known how many transformers are in use that were analyzed and shown to contain <2 ppm PCB.

Any reduction in the detection limit or quantification level would likely require Tacoma Power to re-test all transformers that were originally sampled and shown to contain <2 ppm PCB prior to disposal of the equipment, significantly negating the value of the previous sampling effort. Any change in the detection limit would become a penalty for any electric utility entity that previously attempted to identify the PCB level in its system in order to reduce the PCB burden.

The ETF proposes that EPA leave the current detection levels and quantification levels of PCB in oil unchanged, unless a compelling reason (other than simply the ability to do so) arises.

XIII. TO ENCOURAGE DISPOSAL EPA SHOULD REVIVE THE SUCESSFUL VAR PROGRAM

Some time in early 2003, the EPA, in association with various electric utilities in California developed a cooperative voluntary effort to reduce the use and presence of PCBs. The VAR program was limited to western states EPA Regions 8, 9 and 10. The idea of the Voluntary Accelerated Removal Program was to foster cooperation among regional industrial sectors that still used PCBs at their facilities in order to reduce and eliminate their use.

Beginning around 2006, the ETF held meetings with EPA officials in Nevada, Oregon, Utah and Washington to discuss a VAR program for Region 10 electric utilities. VAR, in the ETF's view, built upon the successful electric utility program to reduce and eliminate PCBs throughout their systems. Numerous positive meetings were held. The program was dropped by EPA sometime in 2006. No detailed explanation has been given although during one of the stakeholder meetings for the ANPRM, the ETF was told by EPA's Dr. John Smith that the VAR program was too costly. In ETF's view this simply makes no sense.

A. Advantages of VAR Program are Proven Disposal of PCB Electrical Equipment

The advantages of the VAR program are set forth in the June 6, 2003, EPA document describing PCB phase down program (Attachment A). This document reflects stakeholders' meetings between electric utilities, other industries, and EPA to develop methods to reduce PCB use throughout the electrical systems. The idea of the VAR is straightforward. Its main goals are to 1) recognize efforts by industry to reduce or eliminate the use of PCBs, and 2) encourage and incentify VAR programs.

In 2007, the Director of Region 10 Office of Compliance and Enforcement sent out letters to NWPPA public and investor owned utilities recognizing and commending their self-implemented VAR programs. These letters were sent directly to the CEOs and Directors of the companies' environmental departments. As a result of the positive agency reinforcement, there was significant impact on continuing individual utility VAR programs and the budgeting for them.

With these two goals in mind EPA agreed that the overall reduction of PCB use would meet requirements for various treaties agreed to between the United States and foreign countries.

Specifically, it would meet the terms of the Stockholm Convention on Persistent Organic Pollutants (POPs) Treaty. The reason is because the VAR program meets EPA's ultimate goal in achieving overall reduction in PCB use by phasing out PCB use. The idea was to create a program that was flexible, organizational specific, and led to confirmed PCB reductions.

B. How a new VAR Program Would Accelerate Disposal of PCB Electrical Equipment

The VAR program begins with the voluntary commitment to reduce PCBs. For electric utilities this is a continuation of what is already occurring. The idea is to develop a series of Best Management Practices (BMPs) which electric utilities would utilize to reduce and dispose electrical equipment containing PCBs. Attachment E is the July 12, 2006 NWPPA/EPA PCB VAR "Electric Utility Best Practices." This document describes some of the BMPs agreed to between EPA and electrical utilities in the past. Some of the BMP's are:

1) Replace and dispose of electric equipment PCB Askarel transformers,

2) Replace and dispose of large PCB capacitors with non-PCB units at substations and restrict/control access areas,

3) Test and retrofill PCB and PCB-contaminated transformers at substations and power plants, rendering them PCB free,

4) Replace units predating 1980 at hydroelectric facilities,

5) At the time of equipment repair, maintenance, and servicing, test, replace, and properly dispose of working transformer units that contain detectable PCB levels. These levels could vary depending upon needs of individual utilities,

6) Dispose of any units found to contain PCBs,

7) Under circumstances that a vintage transformer fails in a neighborhood, replace all similar vintage transformers,

8) Test and replace equipment located in environmental sensitive areas such as waterways, and

9) Strategically sample soils at substations and remove contaminated soils.

These BMPs were to be implemented by utilities participating in the VAR program.

The purpose of the BMP for electric utilities was to reach specific PCB reduction goals. Electric power systems would by a specific date accomplish/require specific goals such as replacement of all name plate Askarel equipment (*i.e.*, transformers and large capacitors) and identification and replacement of all mineral oiled equipment contaminated with PCBs $\geq$ 50 ppm or higher.

Other goals would be to eliminate PCB equipment at a fixed rate of say 4 or 5% per year. The idea was to eliminate regulatory obstacles to achieve PCB reductions. Once such obstacle noted at page 5 of the PCB phase-down program (Attachment A) document was excessive testing, which was identified as a barrier because of significant demands on trained human resources and capital to investigate millions of pieces of equipment. Instead, utilities believe it is better to simply take equipment out of service at the end of its life cycle than to continually test it.

C. Examples of VAR Plan Successes

Attachment F is EPA's "Draft Voluntary Accelerated Removal Program Bulletin." The EPA bulletin summarizes the overall benefits of the VAR program and recognizes that VAR was being pilot tested in EPA Region 9.

Attachment E is a Draft Unnamed Utility Company Form jointly prepared by NWPPA/EPA summarizing utility BMPs dated July 12, 2006. Here, electric utilities agreed to BMPs for activities to reduce overall PCB use throughout a defined period of time.

Unfortunately, EPA appears to have abandoned the VAR program and is now turning toward complicated regulations in the ANPRM. **The ETF Recommends that EPA embrace the success that is already occurred and build upon the VAR program which was abandoned in 2006**.

D. ETF Recommendations to Accelerate Disposal of PCB Equipment

The ETF recommends that EPA develop a new nationwide VAR program through this rulemaking. EPA should build upon the very significant successes of electric utilities over the last two decades in disposing of PCB transformers and electrical equipment. The idea is for EPA to establish a program in which electric utilities could opt in to with the appropriate EPA regional office for PCB reduction. The system would be incorporated through a VAR plan which would contain BMPs approved by EPA. The plan would be enforceable by EPA and would contain BMPs and specific milestones for reduction of use in PCB and disposal of transformers and electrical equipment.

As the ETF task force has shown, a massive amount of PCB containing transformers and electrical equipment has been destroyed in the last two decades. This process continues throughout the United States and in EPA Region 10's jurisdiction. NWPPA believes that EPA needs to reduce barriers and obstacles created by excessive regulations and embrace a program which encourages utilities to eliminate use of PCB transformers and to properly dispose of them as soon as possible. This has already been occurring. EPA needs to encourage its continuance and to accelerate its effectiveness.

ATTACHMENT A

VOLUNTARY ACCELERATED REMOVAL (VAR) PROGRAM SUMMARY OF PCBS FROM ELECTRICAL EQUIPMENT IN CALIFORNIA

RESULTING FROM THE SAN FRANCISCO STAKEHOLDER WORKSHOP (JUNE 5, 2003)

PCB PHASEDOWN PROGRAM

Program Summary

The United States Environmental Protection Agency (U.S. EPA) in association with "Stakeholders" from varied industry segments in California wishes to develop a cooperative and voluntary effort to reduce the use and presence of polychlorinated biphenyls (PCBs) throughout industry and the environment within the Region 9 states. This Voluntary Accelerated Removal (VAR) Program is aimed at fostering a spirit of cooperation among Regional industrial sectors who still may retain and/or use PCBs at their facilities and the Regulators interested in reducing these persistent and toxic constituents in the environment.

The cornerstone of this program is the aspiration that through these shared and cooperative efforts, the principal users/generators of PCBs can find some relief from burdensome regulatory oversight and network with other personnel in similar or different industrial sectors to find economical and technically feasible ways to reduce/eliminate the use or presence of PCBs now and in the future. In addition to the clear goal of reducing a persistent environmental and human health threat, it is anticipated that the Stakeholders will be strongly recognized for their efforts in the reduction of PCBs as well as potentially setting the tone for similar programs elsewhere within Region 9 and across the country.

To date, the majority of the participating Stakeholders have been from major California utilities and other related industry sectors (i.e., electrical equipment owners/operators). For over two decades, California utilities and electrical equipment owners/operators have made great strides in voluntarily purging their systems of these environmentally persistent chemicals (PCBs). This program will also recognize them for these efforts.

San Francisco Stakeholder Meeting

It is widely recognized that these cooperative efforts may be viewed differently by varied Stakeholders. However, in general there appears to be consensus on what could become the foundation of this program, including:

X **Recognizing efforts made by industry to reduce or eliminate the use of PCBs**
X **Encourage and incentivize voluntary accelerated PCB removal programs**

These two goals formed the basis for many discussions held during the one-day Stakeholder workshop which was attended by representatives of numerous California utilities, military bases, and the U.S. EPA. The workshop was held on June 5, 2003 in San Francisco at the offices of the Pacific Gas and Electric (PG&E) Company. During the Stakeholder meeting, the participants:

1. Reviewed the status of the national and California inventories of PCBs in electrical equipment (i.e., transformers and capacitors) and other applications (e.g., gas pipelines, substation soils, calking).

2. Discussed their policies and operational procedures, PCB-containing equipment phase-out priorities, environmental practices and programs, regulatory concerns, and plans for the future.

3. Identified the scope, motivations, requirements, incentives, design, features, format, schedule and business case for a voluntary PCB reduction program.

What is the goal? The ultimate goal is the achievement of an overall reduction in PCB use. Since 1979, U.S. EPA has been emphasizing the phasing-out of PCB manufacture and uses. In the last decade, U.S. EPA has been further exploring opportunities to encourage removal of PCBs in electrical equipment on a voluntary basis. The aim is to create a program that is flexible, organization-specific, and leads to confirmed PCB reductions.

Voluntary reduction goals also relate to actions and intents expressed under the three following international agreements.

> ***The 1996 North Regional Action Plans for PCBs signed by Canada, Mexico, and the United States which aims to "fully eliminate by 2008 the non-dispersive uses of PCBs, such as found in Askarel (pure PCBs) transformers and PCB capacitors."***
>
> ***The 1997 Binational Toxic Strategy signed by Canada and the U.S. which sets a goal for each country to seek specific reductions in the use of PCB equipment -- for the U.S., the goal is 90% reduction nationally of high-level (>500 ppm) PCBs in electrical equipment by 2006, as measured from the baseline year of 1994.***
>
> and
>
> ***The Stockholm Convention on Persistent Organic Pollutants (POPs) Treaty which sets goals for the elimination of PCB use in electrical equipment by 2025.***

Since the mid-1960s, the national electrical utility industry has worked continuously with the federal government concerning the safe use and management of PCBs in electrical equipment. The industry has endeavored to measure the population of electrical equipment and undertaken voluntary actions to (1) educate equipment owner/operators, including non-utilities, on the safe use, handling, cleanup and proper disposal of PCBs and (2) remove equipment on an accelerated basis.

What is the program scope? As currently conceived, this program's initial focus is on the reduction of PCBs in electrical equipment. PCBs are generally associated with electrical equipment and the majority of electrical equipment is owned and operated by electrical utilities. However, since the mid-1960s, it has been known that PCBs are present in the global environment as a result of widespread open use (e.g., sealants) and closed (e.g., electrical equipment) use. In some instances, PCBs are incidentally manufactured. They are also buried in landfills, resident in aquatic sediments (e.g., Hudson River), and exchanged between large water bodies and the atmosphere. In the San Francisco meeting, non-electrical PCB occurrences mentioned included natural gas pipelines, calking and electrical substation soils.

Since the vast quantities of PCBs were manufactured for use in electrical transformers and capacitors, it is suggested that this equipment population be the program's initial focus. The national inventory of PCBs was reported to be 352 million pounds (U.S. EPA, 1982).

Utility participants inquired about the inclusion of non-utility equipment owner/operators (i.e., federal, state and local government, building owners, academic institutions, industry and even small businesses) within the program scope. In 1982, U.S. EPA estimated that nonutilities owned 70% of the Askarel transformers (60 - 70% PCBs by weight), 20% of the mineral oil transformers, and 15% of large PCB capacitors (nearly 100% PCBs by weight) (EPRI, 1988) thought to be in existence.

Since the California utilities have had considerable expertise and experience managing PCBs and own the majority of the state's total population of electrical equipment, it makes sense to work, non-exclusively, with this community on the program design and invite other electrical equipment owner/operators to join the effort.

What is the program form? The exact VAR Program is still being devised; however it is apparent that this would likely be modeled after other similar voluntary programs. In the past, the U.S. EPA and other federal government agencies have engaged in many different types of voluntary programs with industry. Three of these programs were specifically mentioned in the workshop; descriptions of which can be found at the following websites:

X WasteWise at http://www.epa.gov/wastewise/

X SF6 Emissions Reduction Partnership for Electric Power Systems at http://www.epa.gov/highgwp1/sf6/

X The Strategic Goals Program: Metal Finishing Industry at http://www.strategicgoals.org/

These programs share many common features, including:

X Voluntary commitment to exceed current government regulations for environmental and economic reasons;
X Flexibility in the self-generation of measurable program goals and objectives;
X Establishment of a goal measurement or accounting system;
X Provision for submission of annual progress reports to U.S. EPA or Partnership Administrator;
X Creation of a forum for information exchange, best management practice sharing, and discussion;
X Participatory incentives; and,
X Free program membership.

In further discussing each of these programs, it was apparent that all utilities were familiar with the SF6 (sulfur hexafluoride) voluntary program because it addressed a dielectric used in electrical equipment. When released, SF6 is said to be a "highly persistent greenhouse gas that contributes to global climate change." To join the SF6 Emission Reduction Partnership, program participants signed a Memorandum of Understanding (MOU) with U.S. EPA that identifies the commitments of the agency and the participant. A suggestion was made that a MOU for the voluntary removal of PCBs could be constructed during 2003 and possibly implemented in 2004.

Make the Voluntary Commitment to Reduce PCBs

All of the consulted California utilities had previously made a voluntary commitment to reduce PCBs in their electrical systems. In most cases, this commitment was made in the mid-1980s. These commitments were examined to evaluate the following: (1) What were the drivers for the commitment? (2) What best management practices were instituted?

The main drivers reported by Stakeholders include; potential liability (environmental and public health damage, lawsuits, power outage time associated with PCB spills or fires), cleanup costs, negative public relations, negative customer relations, businesses unable to operate during cleanups. These concerns reflect the fact that utilities are mandated to provide a public service and service interruptions are unacceptable.

As a result, the following voluntary, best management practices have been instituted:

X Replace and dispose, or retrofill all PCB Askarel transformers.
X Replace and dispose of large PCB capacitors with non-PCB units in substations and restricted/controlled access areas.

X Test and retrofill PCB and PCB-contaminated transformers at substations and power plants, rendering them PCB-free.

X Replace units predating 1980 at hydroelectric facilities.

X At the time of equipment repair, maintenance, and servicing; test, replace, and properly dispose of working transformer units that contain detectable PCB levels. Utilities offered suggestions for different action levels (<1 ppm, <2 ppm, <50 ppm, 50-500 ppm, and above 500 ppm).

X Dispose of any units found to contain PCBs. Utilities offered suggestions for different action levels (i.e., over a detectable level of PCBs, or over 50 ppm PCBs).

X Under the circumstances that a vintage transformer fails in a neighborhood, replace all similar vintage transformers. The premise is that this unit may possibly contain PCBs and since a crew has already been dispatched, it makes economic sense to replace less energy efficient, older equipment that may be near the end of its useful life.

X Test and replace equipment located in environmentally sensitive areas such as waterways.

X Strategically sample soils in substations and remove contaminated soils.

These actions are management ordered decisions that have been reflected in directives, corporate and operating policies and procedures, and capital investments in the case of replacing equipment. Therefore, a statement concerning management's past and ongoing commitment to reduce PCBs may also be appropriate under the VAR Program.

What are your PCB reduction goals? When asked about their workshop expectations, California utilities indicated an appreciation for the opportunity to participate on the front-end design and formulation of a PCB reduction program. They requested flexibility, possibly a menu of options, which could be customized to an organization's type, size and individual needs and system priorities. By allowing program participants to self-generate their goals, each utility is able to consider business, environmental, economic and operational concerns and set goals that are more likely to be achieved.

A "PCB-Free electrical power system by 2008" is an example of an ambitious goal. To achieve it would require, and could be defined to mean, the: (1) replacement of all nameplate Askarel equipment (i.e., transformers and large capacitors) and (2) identification and replacement of all mineral oil-filled equipment contaminated with PCBs at a concentration of 50 ppm and higher.

When asked to identify obstacles to accelerated PCB reduction, utilities most often mentioned the cost of implementing a program to individually de-energize, sample, send the sample for PCB testing, etc. Testing cost was identified as the most challenging barrier because of the often significant commitment of trained human resources and capital to investigate millions of pieces of equipment.

In 1993, the Great Lakes Utilities estimated the cost of testing 4.2 million pieces of electrical equipment at upwards of $1.3 billion (Lingle and Wilson, 1993). For illustration purposes, if 2%

of this equipment were found to contain >50 ppm PCBs, then 84,000 units could conceivably be slated for replacement. If 0.2% of these units contained 500 ppm and greater PCBs, then 8,400 units would likely be removed. Again, capital would need to be set aside for the actions and then they would likely be implemented on a phased basis.

When evaluating the opportunity of equipment testing or replacement, a utility weighs the cost of testing against the incidence of spills and their cleanup and liability costs, and considers the value of avoided energy losses employing more efficient technology. Utility participants also expressed the desire to know the location and PCB concentration of their affected equipment. With that knowledge, the utility has the option of replacing a unit, relocating a unit or pre-planning for a future spill event. However, it is the cost associated with acquiring the answers to the above options that is a challenging dilemma.

When asked about potential voluntary actions, utilities indicated that they would likely set goals that target the remaining Askarel equipment (e.g., PCB Capacitors), remove equipment at the point of servicing and maintenance, and possibly address equipment located in sensitive areas (hydroelectric plants, waterways), where spills and cleanup could be more costly. Participating organizations would be expected to set measurable goals and objectives.

Recommended Actions

Develop and Implement a PCB Inventory Accounting Methodology

Under U.S. EPA regulations, organizations track the management and disposal of PCBs, but not necessarily the general population of PCB Askarel-filled or PCB-containing mineral oil-filled equipment remaining in service or storage. As a result, the population of PCB-containing equipment and its frequency of distribution are not known. Within the electrical equipment population, the bulk of PCBs were contained in units manufactured to use PCBs as the principal dielectric fluids, PCB Askarel transformers (60-70% PCBs by weight) and large PCB capacitors. In California utility systems, most of these units have already been removed.

In 1982, according to U.S. EPA, 352 million pounds of PCBs were found in 3,420,000 transformers and capacitors. These units are readily identifiable because of their nameplate information. However, a much larger population (estimated at 25 million units) employ mineral oil as the principal dielectric fluid. These units contain a smaller total quantity of PCBs (328,000 pounds); a percentage of these units were incidentally contaminated between less than 1 ppm and over 500 ppm PCBs during manufacturing or equipment servicing operations. However, these units can only be identified through testing.

Previously employed methodologies (USWAG, 1982; EPRI, 1988) have relied on testing programs, and an analyses of the addition of new equipment (due to service territory growth and

normal equipment attrition rates) to estimate the distribution of PCBs over the electrical equipment population.

In the San Francisco meeting, utilities reported that between 0.2 and 2% of mineral oil-filled transformers contained greater than 50 ppm PCBs, significantly less than the national average of 11 - 12% reported in 1982. This is likely the direct result of the 20 year influx of new PCB-free equipment and the replacement of expired units. However, in 1988, Resource Planning Corporation reported that this equipment is removed at the average rate of 2.1% per year and 4% is added each year for a net increase of 2% per year. As one component of the proposed VAR Program, a methodology for estimating the total population of electrical equipment and the total quantity of PCBs in the electrical system would be developed.

Track and Annually Report PCB Reduction

As a condition of membership, voluntary programs for the SF6, WasteWise, and Strategic Goals Programs require participants to file annual reports that provide data, analysis and discuss their progress toward the achievement of self-generated goals. Each year, participants identify and report progress on their PCB reduction goals. Under this component of the VAR Program, PCB-reduction methodologies would be described, data presented, and a narrative of performance provided.

Create and Participate in a Partner Forum

The activities leading up to and including workshops such as that held in San Francisco on June 5, 2003 serve to create a forum for exchanging information; sharing best management practices; enlisting of other equipment owner/operators, and collaborating on mutually beneficial programs that contribute to the single purpose of reducing PCBs. In addition, Strategic Goals and WasteWise, well-funded and mature programs, effectively use their web sites and administration to perpetuate or transition discussions, while minimizing travel costs.

Several important issues were covered in the workshop that require further follow-up:

1. California utilities have eliminated the vast majority of PCB-containing equipment (and PCB mass) from their systems. Most have already removed all of their Askarel transformers and have nearly completed removal programs for the remaining PCB capacitors in restricted access locations (e.g., substations). This accounted for most of the PCBs in utility-owned service in 1982. This is a milestone that deserves validation and recognition.

   In addition, there has been no formal study of the PCB inventory in the non-utility sector which could possibly be the source of the remaining "low-hanging fruit" for PCB removal, possibly including Askarel equipment. According to U.S. EPA figures, most of

the PCB mass, 70% of the PCB Askarel transformers, were owned by non-utilities (1982). Affected Stakeholders could include federal facilities, industrial customers, state government, and small business.

While the VAR Program relies on the utilities as the program core, attracting other equipment owners/operators will lead to more complete knowledge of the PCB inventory in California and voluntary accelerated reduction opportunities. Additional Stakeholders may include:

X Chambers of Commerce
X City/County Government (CUPAs)
X State DTSC

2 The PCB Regulations and their revision are the guidepost for successful PCB material and waste management, and can be a stumbling block to further voluntary action. Participants identified obstacles and opportunities for easing the regulatory burden and promoting a shift to accelerated removal. These include:

X Speeding the de-registration of former PCB Transformers
X Creating a nomenclature for non-authorized equipment (e.g., bushings)
X Incentivizing the examination of substations soils
X Streamlining the cleanup process to improve quality and efficiency
X Aligning the sampling plan to the needs of utility field operations
X Lengthening the timeline for PCB storage and disposal
X Reducing the redundancy of PCB Annual Documentation and Manifests
X Developing an endpoint for reducing testing of natural gas pipelines

3. Mid-size to small entities may not have the knowledge or the resources to address their PCB equipment. The VAR Program creates ideas, mechanisms, and funding sources to encourage equipment testing and replacement. For example, an adapted "household hazardous waste days" program was suggested by participants. An ideal program would encourage equipment owners/operators to identify themselves and their equipment for inclusion in a funded (or SBA-low interest loan) program to remove, replace and properly dispose of equipment. Such a program would also include pre-qualified vendors with specific expertise offering their services.

4. For utilities, because of their widespread geographic coverage, the remaining PCBs are the most difficult, hazardous, and expensive to locate and remove, namely, mineral oil-filled, PCB-containing (<1 ppm - >500 ppm PCBs) equipment. Testing this equipment is a major obstacle to accelerated removal and an opportunity for collaborative and sponsored research on noninvasive equipment testing for PCBs. At this time, the only real way to test transformers is through a multi-step process that includes coring a unit,

spigot installation, or top removal and acquiring a liquid sample, transporting it, cleaning it up and extracting PCBs from oil to solvent followed by gas chromatography and confirmation. A more direct, simplified and less costly means to test for PCBs would be a major benefit to the Stakeholders. Thus, a collaborative approach such as these Stakeholder programs which may focus future research on these types of opportunities makes voluntary initiatives more feasible.

Incentives

What is the "business case" for joining? In today's electric utility climate, the pressure to control costs and stabilize electrical rate growth ($/kwh) is intense. Commonly, utility departments must be prepared to present a business case before their senior management and/or boards of directors for not only new programs, but often existing investments. The business case must address two groups; consumers and owners. Participating in a voluntary PCB-reduction program benefits both consumers and system owners (shareholders, taxpayers, co-op members) in one or more of the following manners:

1. California utilities and electric equipment owner/operators are invited to join the VAR Program because it is designed by the prospective participants to address their specific needs. The framework, components and participation requirements of the program are being defined by the participants themselves whereby each participant must shape the specific features of interest to the group. Cost minimization and liabilities of PCB spill cleanup and power service disruption; improving the efficiency of energy provision; and, protecting the public health and environment are important to electrical equipment owner/operators.

2. It is apparent that participating utilities value positive public relations. If U.S. EPA, or the Partnership, recognizes the achievement of PCB reduction through awards and publicity, this has value for the Stakeholders. For example, at an annual dinner attended by senior U.S. EPA officials and executives of participating organizations, WasteWise issues attractive awards to their partner accomplishments. Press releases are issued heralding the voluntary achievements. The agency's web site prominently features the organizations and their results. The participants employ their accomplishments in their own press releases, newsletters, employee recognition initiatives, web sites, and even Annual Reports. In addition, it matters to customers, shareholders, and their communities that organizations are reducing waste generation and recycling, and are solid stewards of the environment.

3. While changing regulations is a time consuming process, U.S. EPA can pursue discretionary enforcement polices that, for example, allow utilities to substitute manifests and reporting for the TSCA PCB Annual Document; allow PCB transformer de-registration without specific U.S. EPA consent; allow utilities to test substation soils

without subjecting them extensive remediation; and, allow the reuse of equipment as an economic incentive for testing.

4. The federal, state, and local government can issue tax credits for accelerated actions.

5. U.S. EPA may support rate relief for capital investment in PCB reduction as mentioned in the U.S. EPA Region 5 study.

Conclusion

Your suggestions and input are welcome in an effort to further delineate and refine the goals and methodology of the VAR Program as outlined in this Summary. It is hoped that your input will help to shape the potential program and activities that may be undertaken by U.S. EPA and other members of this Stakeholder group.

ATTACHMENT B

NWPPA Inventory Request
for the Advanced Notice of Rule Making

5/20/10

Dark gray cells will be calculated for you. You do not need to enter anything into them.

	PPM	Age	Disposed	Total
Inventory PPM Analysis:				
Number of transformers and electrical equipment >500 ppm				1,515
Number of transformers and electrical equipment 50 - 499 ppm				26,562
Number of transformers and electrical equipment 2 - 49 ppm				181,134
Number of transformers and electrical equipment <2 ppm				525,810
Total Number of Transformers/Electrical Equipment in Inventory				***735,021***
Inventory Age Analysis:				
Number of transformers and electrical equipment 50 years old				2,488
Number of transformers and electrical equipment 40 years old				1,731
Number of transformers and electrical equipment 30 years old				127,621
Total Number of Transformers/Electrical Equipment older than 30 years.				***131,840***
Inventory Disposal Analysis:				
Number of transformers disposed of in the last 30 years.				210,072
Approximate number of transformers and electrical equipment >50 ppm you are planing to dispose of in the next 10 years.				66,595

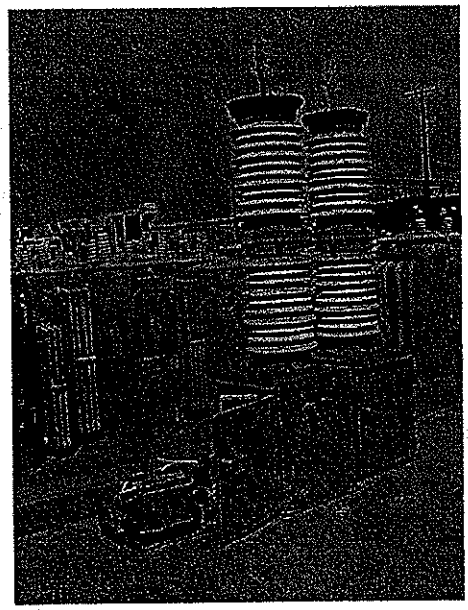
ATTACHMENT C

USWAG

Utility Solid Waste Activities Group

Member Company PCB Reduction Efforts

2006 Update



Since the last update in 2004, electric and gas utility member companies of the **Utility Solid Waste Activities Group (USWAG)** have continued with a wide range of voluntary PCB reduction efforts, both within the Great Lakes Basin and in other regions of the country. At the last USWAG PCB Committee meeting in Columbus, Ohio in April 2006, attendees reaffirmed that most USWAG companies have procedures in place to ensure that virtually all equipment containing PCBs in concentrations ≥ 50 ppm identified during repair/servicing, are disposed and/or retrofilled and not returned to service as PCB-regulated equipment. These reduction efforts, combined with voluntary retrofill/reclassification programs, are resulting in the continued reduction of PCB-containing equipment from utility inventories across the country. The achievements of USWAG members are significant because they help demonstrate that the United States is fulfilling its obligations under the Stockholm Convention on Persistent Organic Pollutants to "make determined efforts" to identify and remove PCB equipment (≥ 500 ppm PCBs) from use by 2025, and to "endeavor to" identify and remove PCB-contaminated equipment (≥ 50 but < 500 ppm PCBs) from use by 2025.

In addition to the systematic retirement of PCB-containing equipment identified during repair/servicing, USWAG member companies also undertake, where practical, dedicated efforts to identify and remove PCB-containing equipment from service.

For example, **Ameren**, which serves 2.4 million customers in Missouri and Illinois, has voluntarily removed all large PCB capacitors from its system. Large oil filled in-service electrical equipment (*i.e.*, substation, network transformers and generating station equipment) have been tested for PCB concentration and either replaced or reclassified to at least below 499 ppm PCBs and in most cases below 49 ppm PCBs. Large equipment in-storage for reuse has been reclassified to below 49 ppm PCBs. Large spare bushings have been tested for PCB content, if possible. The majority of the spare bushings with a

PCB content over 49 ppm PCBs (tested and assumed) were sent for disposal. Distribution electrical equipment removed from service is not placed back into service or in-storage for reuse unless it has a manufacturer certified non-PCB label. Only verified non-PCB distribution equipment is sent for repair.

American Electric Power (AEP), with more than 5 million customers and celebrating its 100th anniversary in 2006, continues to achieve excellent PCB use reductions in its 11-state service territory of Arkansas, Indiana, Kentucky, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, Virginia, and West Virginia. Within the Great Lakes Basin, AEP has no known PCB Transformers or PCB large capacitors. In calendar years 2005-2006, AEP removed from its service territories in EPA Regions 3 through 5 the following items: 207 PCB large capacitors, 544 PCB items containing ≥ 500 ppm PCBs (211 being PCB Transformers), 3,046 PCB-contaminated articles (between 50 and 499 ppm PCBs), 25,001 non-PCB items and 896 non-PCB large capacitors (between 2 and 49 ppm PCBs). In its EPA Region 6 territory AEP removed 586 PCB large capacitors and 132 PCB items containing ≥ 500 ppm PCBs, 618 PCB-contaminated articles, 738 non-PCB large capacitors and 22,011 non-PCB articles of electric equipment.

Arizona Public Service ("APS") is Arizona's largest and longest-serving electric utility, serving more than one million customers in 11 of the State's 15 counties. APS owns, operates and maintains more than 40,000 miles of transmission and distribution lines throughout Arizona. Over the past seven years, APS has been successful in reducing the use of PCBs in electrical equipment by targeting suspected equipment based on manufacturer name and serial numbers. From 2000 through 2004, APS removed 3,212 pieces of PCB (≥ 500 ppm) or PCB-contaminated (≥ 50 to 499 ppm) equipment from service, resulting in the disposal of 425,336 kg. of PCB material. During 2005 and 2006 APS has removed an additional 6,615 pieces of PCB-containing equipment from our transmission and distribution system representing 583,484 kg. of disposed material, including the following: 5,983 large PCB capacitors (317,458 kg), 287 PCB-contaminated and PCB bushings (29,965 kg), and 345 PCB-contaminated and PCB Transformers (236,061 kg).

Central Maine Power Company (CMP) has continued with its voluntary multi-year effort to remove PCB-containing equipment from its system. CMP has removed all of its known PCB Transformers and sources of PCB oil ≥ 500 ppm, as well as transformers suspected of being PCB-contaminated (50-499 ppm PCBs) near schools and waterways. CMP continues to actively seek out and remove transformers it believes are most likely to be PCB-contaminated. Since 1999, CMP has removed over 11,000 targeted transformers (up from the 7,700 originally planned), of which approximately half were actually PCB-contaminated.

These PCB reduction efforts are not limited to USWAG members in the Great Lakes Basin. For example, in 2005, New York-based **Consolidated Edison** (ConEd), as part of ongoing maintenance and repair, removed 10,556 lb. of equipment containing ≥ 500 ppm PCBs and 217,054 lb. of equipment containing 50 to 499 ppm PCBs. Through the third quarter of 2006, ConEd completed its 5-year phase-down project for rectifiers in Manhattan that formerly contained over 500 ppm PCBs. This final stage removed and disposed of 49,168 lb. of equipment. Additionally, during 2006, as part of ongoing maintenance and repair, ConEd removed 8,325 lb. of equipment containing ≥ 500 ppm PCBs and 53,874 lb.

of equipment containing 50 to 499 ppm PCBs.

Another USWAG member in the Great Lakes Basin, **Consumers Energy**, has made dramatic progress in voluntarily phasing out PCB-containing equipment. In 1994, Consumers Energy entered into an agreement with EPA Region 5 to phase-out known, large PCB capacitors and large PCB Transformers (*i.e.*, substation equipment) by 2005. Consumers Energy achieved this commitment in 2000. During the last twelve years, Consumers Energy has removed from service, detoxified, and reused approximately 347,000 gallons of PCB oil, including approximately 30,900 gallons in 2005. Consumers Energy achieved additional phase-out successes in 2005, including removing 89 distribution transformers, approximately 2,000 gallons of oil containing less than 500 ppm PCBs, 327 ballasts, 336 distribution capacitors, and 33 bushings from service.

Detroit Edison, a subsidiary of DTE Energy, serves more than 2.1 million customers in Southeastern Michigan. In 2005, during maintenance calls, storm response or reliability improvement, Detroit Edison removed and disposed 82 newly identified PCB Transformers and 459 pieces of PCB-contaminated equipment from distribution and/or generation facilities. In 2006, Detroit Edison continues to remove and dispose newly identified equipment through these programs. Through the third quarter of 2006, 48 pieces of PCB equipment and 353 pieces of PCB-contaminated equipment have already been disposed. Detroit Edison also continues to pursue PCB reduction activities through retrofilling and reclassification of identified PCB-containing equipment.

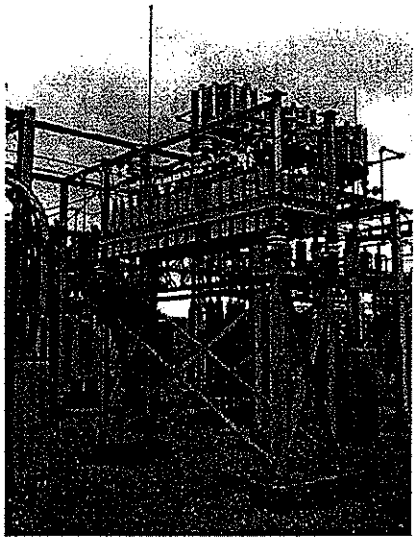
Duke Energy, which serves 3.8 million electric customers in North Carolina, South Carolina, Ohio, Kentucky and Indiana, has implemented a voluntary PCB phase-down program. Duke Energy has tested all large electrical equipment in its substations, power plants and vaults. Any equipment containing $\geq$ 50 ppm PCB oil that was identified in these areas have been removed and replaced with units containing no PCBs, or have been retrofilled to bring the PCB level to < 50 ppm PCBs, or have been upgraded with spill prevention controls to prevent any release to the environment. Because of these efforts, Duke Energy currently has only a few known PCB Transformers ($\geq$ 500 ppm) in its system, and no PCB large capacitors. As a matter of general policy, when Duke Energy identifies any distribution type equipment containing $\geq$ 50 ppm PCBs, the Company either replaces the equipment or retrofills the equipment to bring the PCB level to < 50 ppm PCBs as soon as feasible. Further, in Indiana, Duke has tested all transformers on school properties (K through 12th grade), and any transformers containing $\geq$ 50 ppm found in these areas have been voluntarily removed and replaced with transformers containing no PCBs.

USWAG member **Entergy** also has invested substantial resources in implementing a successful PCB phase-out program. In 1998, Entergy dedicated approximately $2 million for the removal of PCB Transformers from its Fossil Generating Plants. From 1999-2001, Entergy voluntarily opted to phase out all PCB Transformers from its Fossil fleet. During that span, approximately 105 PCB Transformers were removed from service as well as a number of PCB large capacitors. Of Entergy's Fossil Operations in EPA Regions 4 and 6, only 17 PCB large capacitors remain in service. Fossil Operations continues to phase out PCB electrical equipment when possible. Based on analyses of PCB electrical equipment managed for repair or recycle in 2004,

approximately 99% of this equipment was shown to be non-PCB.

Further, Entergy's Transmission and Distribution system has adopted the policy of many other USWAG members; specifically, no oil-filled electrical equipment brought in for service is returned to operation if it is found to be PCB-contaminated. Entergy's Transmission and Distribution system also has an aggressive program for phasing out PCB large capacitors in its substations. Over the past 10 years, Entergy has replaced all large PCB capacitors in its Arkansas, Texas and Mississippi substations, and has significantly reduced the number in Louisiana. Entergy's Transmission and Distribution system has replaced or taken out of service all of its known PCB Transformers (i.e., containing ≥ 500 PCBs), with the exception of two units in Arkansas. During 2005, Entergy has taken out of service and disposed of 163,011 kilograms of PCB electrical equipment containing ≥ 50 ppm PCBs.

Exelon Energy Delivery (EED), through its subsidiaries ComEd and PECO, operates in Northern Illinois and Southeastern Pennsylvania respectively. EED's phase-out plan for equipment containing PCBs, instituted more than a decade ago, has moved the company from among the largest users of such equipment to a position of operating only a few pieces. As of November 1, 2006, EED accelerated the PCB phase-out process, and removed 880 PCB large capacitors and 59 pieces of PCB/PCB contaminated equipment from its system. In addition, EED is undergoing a voluntary multi-million dollar project to retire a substation containing PCB equipment. The project was initiated to remove 10 askarel-filled transformers and regulators in the City of Chicago. This equipment contains approximately 4,350 gallons of askarel. Through these voluntary efforts,



EED has removed or replaced almost all PCB and PCB-contaminated sources, including all known PCB Transformers in commercial buildings, all known PCB distribution equipment outside of substations, 71 percent of all PCB capacitors in PECO substations, and 96 percent of all PCB large capacitors in ComEd substations. A limited number of PCB Transformers remain in service at several of Exelon's nuclear plants. This equipment is monitored and most equipment is scheduled to be replaced or retrofilled over the next five years.

When **GRE** was formed in 1999, with the consolidation of Cooperative Power Association and United Power Association, much of the PCB (≥ 500 ppm) and PCB-contaminated (≥ 50 to ≤ 499) equipment in the system had already been removed or retrofilled. Since its formation, GRE has continued to evaluate and remove or retrofill PCB and PCB-contaminated equipment in its generation and transmission systems. At this time, GRE has evaluated more than 99 percent of its testable in-service equipment. As of 2005, most of the known PCB and PCB-contaminated equipment in the

Minnesota system has been removed or retrofilled. The only remaining PCB and PCB-contaminated equipment on GRE's Minnesota system are 3,099 large capacitors at GRE's DC substation. These capacitors will be removed according to a phase-out plan that is scheduled to begin in 2009 and be completed in 2011.

Kansas City Power and Light (KCP&L) has eliminated all known PCB equipment (≥ 500 ppm) from their plants and transmission and distribution systems. Based on experience from its field work, KCP&L estimates that 5% of its distribution equipment may be PCB-contaminated (50 to < 500 ppm PCBs). When these devices are found, they are removed from service and disposed. KCP&L has been working to eliminate PCB equipment since 1980 and most recently pushed to remove the few remaining PCB-containing devices from service and inventory. All equipment not designated non-PCB is tested when taken out of service to determine its reuse or disposal status.

National Grid continues with its ongoing efforts to reduce the number of PCB articles in its service territories in Massachusetts, New York, Rhode Island, and New Hampshire. As a result of these efforts, National Grid, whose service territory in New York includes portions of the Great Lakes Basin, has retrofilled or removed from service all known PCB (≥ 500 ppm PCBs) Transformers. Additionally, during calendar year 2005, National Grid systematically retired or decommissioned approximately 750 pieces of PCB-contaminated or PCB electrical equipment (≥ 500 ppm) for a PCB reduction totaling over 162,556 kg. National Grid also removed and disposed of approximately 315,088 kg. of bulk PCB-contaminated transformer oil.

Northern Indiana Public Service Company (NIPSCO), a subsidiary of NiSource, serves 400,000 customers in Indiana. NIPSCO has continued to implement a voluntary PCB phase-down program that began in 1994. Since the program's inception, NIPSCO has removed over 4,579 pieces of equipment that were suspected to contain PCBs, including 56 distribution transformers since 2004. Additionally, NIPSCO has removed from service over 99.9% of the PCB quantity present in its electrical system. NIPSCO continues to address the small number of transformers and capacitors in its system that are known or suspected to have PCB concentrations ≥ 50 ppm. In addition to removal and disposal, NIPSCO enhances its PCB reduction efforts by retrofilling and reclassifying large PCB or PCB-contaminated transformers to non-PCB status.

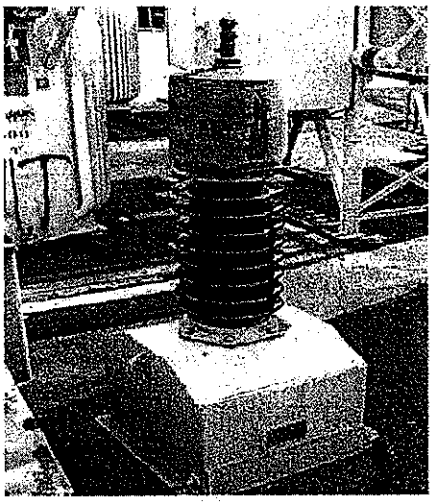
PNM Resources (PNMR), which serves more than 680,000 customers in our service territory of EPA Region 6 through its subsidiaries Public Service Company of New Mexico and Texas/New Mexico Power has implemented a voluntary PCB phase-down program since the early 1990s. Since 2000, PNMR has removed the following items from service: three PCB large capacitors, 52 PCB Transformers and 28 other PCB articles (≥ 500 ppm PCBs); 435 PCB-contaminated articles (≥ 50 and < 500 ppm PCBs); and an additional 1530 non-regulated PCB-containing equipment (> 2 and < 50 ppm PCBs).

In particular, during 2004, PNMR removed four PCB Transformers (≥ 500 ppm PCBs); 38 PCB-contaminated articles (≥ 50 and < 500 ppm PCBs); and an additional 245 non-regulated PCB-containing equipment (> 2 and < 50 ppm PCBs). During 2005, PNMR removed 11 PCB Transformers and one other PCB article (≥ 500 ppm PCBs); 99 PCB-contaminated articles (≥ 50 and < 500 ppm PCBs); and an additional 191 non-regulated PCB-containing equipment (> 2

and < 50 ppm PCBs). During 2006, PNMR removed five PCB Transformers and one other PCB article (≥ 500 ppm PCBs); 91 PCB-contaminated articles (≥ 50 and < 500 ppm PCBs); and an additional 268 non-regulated PCB-containing equipment (> 2 and < 50 ppm PCBs).

Potomac Electric Power Company (Pepco) is engaged in the transmission and distribution of electricity in Washington, D.C. and major portions of two counties in suburban Maryland. Pepco's service territory covers approximately 640 square miles and has a population of approximately 2 million. As of December 31, 2005, Pepco delivered electricity to approximately 747,000 customers. Pepco has approximately 3,300 network transformers in high-density residential areas and approximately 4,000 pad mount transformers located in urban settings. Pepco continues to phase down PCBs by removing PCB-containing equipment, such as istribution and transmission transformers, oil circuit breakers, bushings, and PCB large capacitors from its substations. Pepco implemented a voluntary program to remove PCB large capacitors from substations and replace them with non-PCB capacitors. Since 1990, Pepco has replaced PCB large capacitors with non-PCB capacitors. There are less than 600 PCB large capacitors at substations, down from approximately 3,600 in 1990. Pepco retrofills and reclassifies PCB and PCB-contaminated Transformers to non-PCB status. Pepco has also installed station service transformers containing Envirotemp FR3 Fluid, a non-hazardous seed-based oil.

In South Carolina, **South Carolina Electric & Gas** (SCE&G) has an ongoing, voluntary PCB reduction effort to remove PCBs from electrical equipment. SCE&G provides electric service to 620,000 retail and wholesale customers throughout South



Carolina. Through the early 1990's all large power transformers and regulators were retrofilled and reclassified as non-PCB (<50 ppm) or replaced with non-PCB transformers. All known PCB distribution transformers (≥ 500 ppm PCBs) have been removed from service for disposal.
In addition, all large PCB capacitors in SCE&G's transmission and distribution system have been replaced with non-PCB capacitors. SCE&G also has a long-standing policy to remove from service for disposal all in-stock distribution transformers (small pole and pad mount units) that are identified through testing as PCB-contaminated (≥ 50 to 499 ppm PCBs) and replace the equipment with units containing no PCBs. As a result of SCE&G's commitment to the phase-down policy, through time, SCE&G's inventory of more than 236,822 distribution transformers will contain fewer and fewer "unknown" assumed to be PCB-contaminated units. In the late 1990's SCE&G had over 70,000 "unknown" transformers in service or in-stock. In 2006, fewer than 53,444 "unknowns" remain in SCE&G's inventory. SCE&G's ongoing efforts to remove PCBs when identified resulted in the disposal of 64 transformers, 54 oil-filled bushings, 60

tar-filled bushings, 12 tar-filled potential transformers and 3 oil circuit breakers in 2005. In addition, SCE&G manages all leaking and non-leaking "unknown" small capacitors and lamp ballasts as PCB wastes.

USWAG member **TXU** has, since the early 1990s, aggressively pursued removal of PCBs from its system and, since 1993, has retired 3,457 pieces of PCB equipment (≥500 ppm). With the exception of a small quantity of specialized equipment, TXU has a policy of retiring all distribution equipment identified for repair or service with PCB concentrations > 1 ppm. During 2005, TXU retired 149 pieces of electrical equipment containing ≥ 500 ppm PCBs, 713 pieces of electrical equipment that were PCB-contaminated (50- 499 ppm PCBs), and 3,717 pieces of equipment containing 1 to 49 ppm PCBs.

Vectren Corporation (parent of Southern Indiana Gas and Electric Company), which provides electric service to customers in SW Indiana, has been phasing PCBs out of its system for over two decades. The majority of substation transformers were retrofilled or replaced between the mid-1980's to the early 1990's. As of November 1, 2006, only three pieces of oil filled substation equipment (circuit breakers, regulators, capacitors, or transformers) are known to be PCB-contaminated and they are scheduled to have the oil replaced in early 2007. On the distribution side, steps were taken in the past five years to remove 42 known submersible transformers from the system that typically contained oil in the range of 50-500 ppm PCBs. Two units remain in service due to the property owner's reluctance to allow for the removal but efforts to gain access are on-going. It is also the company's practice to not attempt repair on any unit that was manufactured prior to 1980. Any unit that is damaged or otherwise taken out of service and is pre-1980, is tested to determine the appropriate disposal option.

We Energies, serving more than 1.1 million electric customers in Wisconsin and Michigan, has conducted a voluntary PCB phase-down program for more than a decade. Due to the successful implementation of this program, the company has just eight known PCB Transformers in service in EPA Region 5, all of which are in service at its nuclear plant. This equipment is monitored and periodically reviewed for reclassification or replacement. No other known PCB (≥ 500 ppm) equipment is in service in the We Energies system. Since January 1999, We Energies has removed from service more than 1,300 transformers, large capacitors and bushings containing ≥ 500 ppm PCBs. It is We Energies' general practice that equipment identified as containing ≥ 50 ppm PCBs is either replaced or is reclassified as non-PCB prior to return to service.

USWAG member **Xcel Energy** (Xcel), which serves customers in the northern Midwest, including Michigan, Minnesota, North Dakota, Wisconsin, and South Dakota, also has undertaken voluntary PCB phase-out efforts. During 2006, Xcel removed four known PCB Transformers from service. In addition, Xcel removed 39,008 kg of PCB articles, containers, oil and equipment containing ≥ 500 ppm PCBs and 295,785 kg of equipment containing 50 to 499 ppm of PCBs from service.

USWAG

USWAG was formed in 1978 and is an association primarily dedicated to assisting members in the management of wastes and the beneficial use of materials associated with the generation, transmission, and sale of electricity and natural gas. USWAG is comprised of approximately 80 individual utilities, energy companies, and energy trade associations. Together, USWAG members represent more than 85% of the total electric generating capacity of the U.S., and service more than 95% of the nation's consumers of electricity and over 93% of the nation's consumers of natural gas.

For more information on USWAG's PCB reduction efforts, please contact USWAG Executive Director Jim Roewer at 202/508-5645 or jim.roewer@uswag.org.

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USWAG

ATTACHMENT D

- Audits
- Enforcement Authorities
- Prohibition of Energy Market Manipulation
- Standards of Conduct for Transmission Providers
- Civil Penalties
- Staff Guidance

- CAREERS
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News Release: March 18, 2010 View Printable PDF Version

Docket No: RM09-18-000

FERC proposes to define transmission facilities subject to reliability standards

The Federal Energy Regulatory Commission (FERC) acted today to protect the reliability of the nation's bulk power system with a proposal to standardize the definition of transmission facilities subject to mandatory reliability standards.

Today's Notice of Proposed Rulemaking (NOPR) directs the North American Electric Reliability Corporation (NERC) to include all electric transmission facilities of 100 kilovolts (kV) or more in its definition of what constitutes the "bulk electric system" subject to mandatory reliability standards under the Energy Policy Act of 2005. NERC is the Commission-certified national electric reliability organization.

The proposal generally conforms to the current definition of the bulk electric system recognized by NERC and seven of the eight regional reliability entities around the country. It would eliminate the discretion that regional entities have to define the transmission facilities that comprise their "bulk electric systems," but allow regional councils to seek NERC and Commission approval if they wish to make variations from the 100 kV standard.

"Consumers and the economy depend on smooth operation of a reliable bulk power grid with consistent standards from coast to coast and from cities to rural areas," FERC Chairman Jon Wellinghoff said. "But without this step, FERC cannot fulfill Congress' intent to protect the bulk electric system."

The Commission also notes there is a strong technical justification for a standard 100 kV threshold: Facilities rated at 115 kV and 138 kV have either caused or contributed to significant bulk electric system disturbances and cascading outages. The Feb. 26, 2008, Florida blackout originated from a fault at a facility connected to the 138 kV transmission system and resulted in the loss of 24 transmission lines and 4,300 megawatts of generation associated with 13 power plants and disrupted electric service to more than 3 million customers for several hours.

Comments on the NOPR are due 45 days after publication in the *Federal Register*.

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ATTACHMENT E

Unnamed Utility Company
NWPPA/EPA PCB Voluntary Accelerated Removal Program
Electric Utility Best Practices

July 12, 2006

BACKGROUND

Unnamed Utility Company (UNNAMED UTILITY), incorporated in xxxx, is one of the largest combination of natural gas and electric utilities in the United States. Based in XXXXX, the company is an investor-owned utility and a subsidiary of UNNAMED UTILITY Corporation. The company provides natural gas and electric service to 15 million people throughout a 70,000-square-mile service area in northern and central Unnamed State. The electric system includes approximately 140,000 circuit miles of transmission and distribution lines, 900,000 distribution transformers, and 900 substations.

In the late 1920's, a group of chemical compounds, called polychlorinated biphenyls or PCBs, went into commercial production. Because of their unique physical characteristics, including stability at high temperatures, low flammability, and excellent electrical insulating properties, PCBs have been used extensively in utility electrical equipment, primarily in transformers and capacitors.

Concern over the possible health effects associated with PCBs started in the late 1960's, and in response, the toxic Substances Control Act of 1976 (TSCA) banned the production and sale of PCBs and placed limitations on their use in the United States. After evaluating available studies on the potential hazards of PCBs, the Environmental Protection Agency (EPA), which administers TSCA, issued a comprehensive set of regulation on PCBs in May 1979.

THE COMPANY POSITION

UNNAMED UTILITY is committed to minimizing exposure to its employees and to the public that may result from an accidental release of PCBs and is a leader in the electric utility industry in the removal of PCBs from its equipment. UNNAMED UTILITY has completed a number of aggressive programs to minimize PCB exposure while maintaining reliable energy services and avoiding unnecessary rate increases.

PCB REMOVAL PROGRAMS

The programs described below represent one of the most extensive and costly PCB removal efforts ever undertaken by an electric utility. These have fully complied with and sometimes have exceeded the EPA regulations. As a whole, the programs have removed and safely disposed of more than 99 percent of the PCBs that previously existed in the UNNAMED UTILITY's electric distribution system.

It has been the Company's policy to give first priority to the removal of electric utility equipment which, in an accident, might lead to public or employee exposure to high concentrations of PCBs. UNNAMED UTILITY's programs have been aimed at every major source of PCBs in utility electric equipment, including capacitors, network transformers, and distribution transformers.

Capacitors

Capacitors are hermetically sealed suitcase-sized metal containers usually mounted near the top of power poles. In 1981, recognizing public concern about possible exposure to PCBs, UNNAMED UTILITY became the first major utility to begin a program to replace PCB capacitors. The four-year replacement program, costing approximately $70 million, was completed in December 1984, four years ahead of the EPA-mandated deadline.

Series capacitors located in four major transmission substations connected to the 500kv transmission lines were replaced as part of a 5-year program completed in 2006. Over $78 million was spent for this replacement program, and over 15,000 capacitors were removed.

Network Transformers

Network transformers are used to decrease the voltage of power lines serving large concentrations of customers in the high-load commercial areas major metropolitan cities. Some of these transformers contained high concentrations of PCBs – upwards of 600,000 ppm (60%) – and were usually housed in secure locations such as street vaults or isolated areas in high-rise buildings.

Because of the concerns regarding the high PCB concentrations and the potential hazards if these transformers caught fire, UNNAMED UTILITY embarked upon an unprecedented $55 million network transformer replacement program in September 1983. This program was completed in March 1986 and replaced 983 PCB-filled network transformers.

Distribution Transformers

UNNAMED UTILITY has various types of oil-filled equipment, including regulators, circuit breakers, and substation and distribution transformers that may contain small amounts of PCBs. The distribution transformer is the only equipment generally located in areas accessible to the public.

The Company has approximately 900,000 mineral oil-filled distribution transformers, most of which are mounted on poles. More than 90 percent of these transformers contain less than 50 ppm (0.005 percent) PCBs and more than 99 percent contain less than 500 ppm (0.05 percent) of PCBs.

UNNAMED UTILITY replaced or retrofilled all of the transformers near food and feed facilities containing 500 ppm or greater PCBs prior to the EPA mandated October 1, 1985 deadline. In addition, UNNAMED UTILITY also is replacing or retrofilling all other transformers known to contain 500 ppm PCBs or greater. Until all transformers known to contain 500 ppm PCBs or greater are replaced or retrofilled, they have been duly registered with EPA and labeled as required.

UNNAMED UTILITY has not only complied with governing regulatory requirements but has exceeded them by implementing an ongoing program through which approximately 40,000 transformers are tested annually as part of our maintenance program to determine their PCB content. When a transformer is tested and determined that it contains 50 ppm PCBs or more, it is drained and refilled with non-PCB mineral oil or it is replaced with a new PCB-free transformer.

Substation Transformers and Other Electrical Equipment

Oil analyses of substation equipment, such as regulators, circuit breakers, and transformers, for PCBs have been conducted since the 1980's. For equipment that are not readily testable, e.g. bushings, potential transformers, the PCB concentrations are established according to the assumption guidelines in TSCA. Similar to distribution transformers, equipment with 500 ppm PCBs are retrofilled or replaced.

Additionally, UNNAMED UTILITY partnered with an oil analysis laboratory and developed a state-of-the-art oil condition testing program. Insulating oil are routinely collected from operating substation equipment and analyzed for a variety of indicators, e.g. moisture, dissolved gases, and PCB. Besides fortifying the PCB data for these equipment, analyses of these oil quality metrics allows for a condition-based equipment maintenance and replacement program. This significantly reduces unnecessary equipment replacements as well as equipment failure occurrences.

SUSPECT PCB EQUIPMENT IDENTIFICATION

Analysis of oil for PCB concentration is the most reliable method for establishing or confirming PCB concentration. In addition to the substation oil testing program described, there are few other situations that would dictate oil testing. When there is leakage or spill from electrical equipment, an oil sample is collected and analyzed. Along with existing information for the equipment, laboratory analysis would determine the type of spill clean-up protocol required. Prior to receiving laboratory results, response would be based on the most recent analytical result, the presence of a "no-PCB" or "non-PCB" label, or the equipment serial number. The serial number may be correlated to manufacturer data such as manufacture date and location, which may be useful to guide preliminary decisions. For example, a transformer manufactured in 1986 would be unlikely to be PCB-contaminated. Additionally, substation equipment are inspected at least monthly for leakages as part of the facility's Spill Prevention, Control, and Countermeasure requirements.

THE FUTURE

Due to UNNAMED UTILITY's aggressive PCB removal efforts, the oil quality testing program, the continual replacements of aging equipment, and completion of the series capacitor bank replacement projects, UNNAMED UTILITY is confident that the major sources of PCB in the electric system have been addressed. Potential areas of focus may include the incorporation of distribution transformer nameplate data into the company GIS database. This may improve targeted removal of PCB equipment, as well as spill response efficiencies. We would also encourage the EPA to review the PCB status of transformers owned by industrial customers. Often times, the PCB regulatory knowledge and resources of these customers have not reached the mature level of the electrical utility industry.

ATTACHMENT F

EPA Voluntary Accelerated Removal Program: A Voluntary Initiative to Reduce PCB Use

U.S. EPA Region IX seeks to recognize your organization's efforts to remove and dispose of electric equipment containing PCBs and promote further reduction of PCB use.

INTRODUCTION

Since 1979, one of U.S. EPA's goals has been safe and expeditious removal and disposal of polychlorinated biphenyls (PCBs). Significant results were accomplished through federal regulation, but voluntary actions or best management practices have also been implemented by industry and others, yielding equally noteworthy PCB reduction results.

This Voluntary Accelerated Removal (VAR) Program invites California utilities and non-utility owners and operators of electrical equipment to join a voluntary initiative to reduce PCB use and potential PCB releases. This is one of the first programs to make it possible to promote these efforts and to understand, track, and honor those organizations that are contributing to the accelerated removal and disposal of PCBs. The VAR Program is being pilot tested in California (U.S. EPA Region IX). U.S. EPA has developed comparable voluntary programs (i.e., WasteWise, Strategic Goals, the SF6 program and the U.S. EPA Region 5 PCB Phaseout Program) that enlist, honor, reward, and encourage performance.

WHO CREATED THE PROGRAM?

The VAR Program was developed through the cooperative efforts of stakeholders representing the utility industry, electrical equipment owners and operators, and other related industry sectors, as well as the U.S. EPA Region IX.

WHAT IS THE GOAL?

The ultimate goal of the VAR Program is the achievement of an overall reduction in PCB use. VAR Program participants will help the U.S. achieve national and international commitments to reduce PCB use and potential releases, in cooperation with the following initiatives:

- **The 1996 North Regional Action Plans for PCBs:** Aims to fully eliminate the non-dispersive uses of PCBs by 2008. This includes Askarel transformers and PCB capacitors.
- **The 1997 Binational Toxic Strategy:** Specifies a 90% reduction nationally of high level (>500 ppm) PCBs in electrical equipment by 2006.
- **The Stockholm Convention on Persistent Organic Pollutants:** Sets goals for the elimination of PCB use in electrical equipment by 2025.

HOW THE PROGRAM WORKS

Through the input of multiple stakeholders (California utilities and other organizations), U.S. EPA offers the proposed program for achieving accelerated reductions in PCB use in electrical equipment over the next 5 to 10 year period.

In January 2004, prospective participants will be invited to join the program by signing a one page document that commits the organization to implement a self-designed, self-implemented program that:

- Seeks the accelerated removal of electrical equipment containing PCBs
- Involves setting achievable removal goals and priorities in 1, 5 and 10 year cycles
- Initiates a system for establishing a benchmark and measures reduction progress
- Reports results annually to U.S. EPA
- Selects a point person to work with U.S. EPA throughout the year

During the first year, U.S. EPA will work with participants individually to assist and understand their proposed program.

HOW THE PROGRAM IS ORGANIZED

Participants in the VAR Program will be differentiated by sector (public, private, or investor-owned organizations). In addition, participants will be categorized by the size of their organization (large, medium and small). These distinctions will assist in tracking progress and comparing the progress made by companies of similar structure.

The program will also emphasize utility outreach to customers. Since many utility customers may own PCB electrical equipment and be unaware of their responsibilities. The utility's role in customer involvement will be encouraged through an outreach program.

WHAT'S IN IT FOR YOU?

EPA is aware that many California utilities have PCB management expertise and have voluntarily initiated actions to reduce PCBs and thus prevent future releases, and wishes to acknowledge and honor these efforts. Your organization's participation enables EPA to (1) know about your voluntary effort and, (2) recognize your organization for its ongoing PCB reduction performance.

Also, along with EPA, you are participating in a forum of your peers where you can discuss problems and remedies associated with the (1) accelerated removal of PCBs, (2) implementation of existing PCB regulations, and (3) formulation and targeting of collective research to support the technological and economical removal of PCBs from electrical equipment.

In addition, the following incentives were identified by shareholders and will undergo further evaluation for potential inclusion in the VAR Program. However, U.S. EPA is currently seeking your input to identify key incentives.

- **Easier Method of Reporting:** Introduce electronic PCB reports; eliminate duplicate reporting for PCBs; create a third-party data manager to track PCB reduction efforts; provide a means for electronic de-registration of PCB Transformers
- **Focus Reporting Efforts:** U.S. EPA Region IX will help identify methods to streamline reporting by providing feedback on report content
- **Disposal Discounts:** Specific waste disposal days for participants in order to decrease disposal costs for smaller waste quantities
- **Regulatory System Changes:** Extend PCB storage requirement

- **Financial Incentives:** State tax breaks on PCB disposal; tax credit for newly installed equipment; assist in making small business loans available to help cover PCB disposal costs

- **Exposure to New Systems and Technology:** Participants learn the strategies and approaches of their peers, as well as any liabilities that they may not be aware of

- **Industry's Place at the Table:** Program participants will play an active role in program development

- **Operational Flexibility:** Companies will be able to self-design and self-implement goals

- **Positive Public Recognition:** U.S. EPA will issue a press release announcing the awardees by class and reporting on the status of PCB reductions; A letter of recognition from EPA recognizing participation in the program

- **Honors and Recognition:** Three award levels will be established for organizations of comparable sizes and types (platinum, gold and silver); Awardees and partners will be invited to an annual meeting hosted by the EPA to share results, honor performance, and discuss program plans

INTERESTED IN JOINING?

U.S. EPA welcomes you to participate and join the program. For more information, contact the program's coordinator, Dr. Laura Bloch, at 415-947-4165.