USWAG

THE ELECTRIC UTILITY INDUSTRY'S PERSPECTIVE ON THE RE-REGISTRATION OF PENTA, CCA & CREOSOTE

Notice of Availability of the Preliminary Risk Assessment for Wood Preservatives Containing Arsenic and/or Chromium Reregistration Eligibility Decision

Docket No. OPP-2003-0250

May 17, 2004

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USWAG HAS A VITAL INTEREST IN THE RE-REGISTRATION OF THE WOOD PRESERVATIVES, INCLUDING CCA

I. INTRODUCTION AND BACKGROUND

- USWAG is an association comprised of the Edison Electric Institute ("EEI"), the National Rural Electric Cooperative Association ("NRECA"), the American Public Power Association ("APPA"), and approximately 80 energy industry operating companies. EEI is the principal national association of investor-owned electric light and power companies. APPA is the national association of publicly-owned electric utilities. NRECA is the national association of rural electric cooperatives. Together, USWAG members represent more than 85 percent of the total electric generating capacity of the United States, and service more than 95 percent of the nation's consumers of electricity.

- USWAG was formed in 1978 and since then has worked with the United States Environmental Protection Agency ("EPA" or "Agency") to inform the Agency of the impact of its regulatory decisions on the industry's obligation to provide reliable, safe and cost-effective electricity to millions of customers throughout the United States.

- USWAG is not a Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA") registrant, nor are we directly involved in the FIFRA re-registration process for pentachlorophenol, chromium copper arsenate ("CCA"), and creosote currently underway within the Agency's Antimicrobials Division. Individual USWAG members, however, are consumers of treated wood products for utility poles and cross-arms. USWAG, therefore, has a critical interest in the Agency's deliberative process regarding the re-registration of all three wood preservatives, including CCA for commercial and industrial use. This is because treated wood is the most cost-effective, practical, and viable option for use in electric utility poles. Therefore, USWAG believes it is important to provide EPA with this information when evaluating the reregistration of CCA.

- The overwhelming majority of support structures used by electric utilities for the distribution of electricity across the country, including both new construction and maintenance of existing plant, are comprised of treated wood poles.

- *The failure to re-register these preservatives, including CCA, would have a devastating impact on the ability of electric utilities to continue providing reliable and cost-effective power to hundreds of millions of customers throughout the country*, including federal facilities, hospitals, schools, and commercial and residential customers. Treated wood structures also are used to support telecommunication services, which also would be severely disrupted by the failure to re-register these preservatives.

II. TREATED WOOD IS THE ELECTRIC UTILITIES' MATERIAL OF CHOICE

- A 2002 USWAG Survey revealed that approximately 44 million treated wood poles currently are in service by those USWAG members (and electric co-operatives) responding to the Survey. When extrapolated out to reflect the entire electric power and telecommunication industries, USWAG estimates that there are approximately 130 to 135 *million* treated wood poles currently in service.

- Respondents to the USWAG Survey reported that they purchased approximately 719,000 new treated wood poles annually, either to provide electrical service to new service areas or to replace damaged poles in existing service areas. When extrapolated out, we estimate that at least several million treated wood poles are purchased annually by electric utilities alone.

- Less than 1% of electric utility distribution poles are preserved with alternative preservatives or manufactured with alternative materials. A slightly higher percentage of non-treated wood materials, primarily steel, are used for large transmission support structures, but even here a large number of the structures are treated wood. **Thus, treated wood represents the backbone of the nation's electric distribution system**.

III. PROTECTIVE MEASURES EMPLOYED BY UTILITIES TO REDUCE POTENTIAL EXPOSURE TO WOOD PRESERVATIVES

- The CCA preliminary risk assessment evaluates, among other things, potential occupational exposures to CCA at wood treatment facilities. Downstream consumers of treated wood products – including electric utility workers – plainly do not have the same potential for occupational exposure to wood preservatives as do workers at wood treatment plants. Notwithstanding the minimal potential for direct exposure by utility workers to wood preservatives, a survey of USWAG members makes clear that electric utilities uniformly have protective measures in place for employees handling *any* wood product, including CCA-, penta- and creosote-treated

wood, to protect against general concerns such as splintering, as well as the potential exposure to the preservatives in treated wood. To protect against these concerns, common throughout the industry is the directive that workers (*e.g.*, linemen) wear appropriate gloves, long pants, and long-sleeved shirts that are both rolled down and buttoned when working with or around all wood products.

Many of these company policies set forth explicit directions for the maintenance of the personal protective clothing (*e.g.*, inspection and maintenance of gloves and disposal of worn gloves) and require supervisors to ensure that these conditions are adhered to. In addition to specifying the type of personal protective clothing that must be worn, many company policies also (1) identify the circumstances when personal protective clothing must be laundered, including laundering work clothing separately from personal, non-work clothing, (2) specify the type of clothing to be worn (*e.g.*, a close-knit variety to prevent all dermal contact), (3) provide instructions on special cleaning agents that can be used to remove wood preservatives from the skin, (4) require thorough hand-washing for workers before eating, drinking or using tobacco products, (5) direct workers to use eye protection (*e.g.*, goggles, safety glasses or face shields) and dust masks/respirators when sawing, drilling or otherwise machining treated wood, and (5) require returning to the vendor new treated wood poles that contain excessive preservatives. These worker protection policies are augmented by OSHA hazard communication programs, whereby employees are informed about and trained to protect themselves against the potential hazards associated with the use of wood products, including the preservatives in treated wood. In addition, adherence by electric utilities to basic safety practices for the use of eye-protective equipment when cutting/sawing *any* wood, and compliance with electrical safety code procedures calling for the use of long sleeves and rubber gloves when working around electrical equipment, also have the practical result of protecting against the potential exposure to wood treatment preservatives.

- In addition to the above, the frequency and duration of worker exposure to treated wood is declining across the industry due to changes and improvements in work practices. For example, the increasing use by utilities of industrial forklifts to handle and move treated wood poles prior to installation has significantly decreased the circumstances during which there is direct contact with treated wood by workers. Similarly, exposure of utility workers during the installation of treated wood poles has been minimized. The increasing use of powered pole carriers that are sized to accommodate the tighter space configurations around residential settings has dramatically curtailed the direct handling of treated wood during the installation process. Once the poles are in service, the use of “one-man bucket trucks” that can be maneuvered into a variety of locations on or near utility poles has significantly curtailed the historical practice of utility workers climbing poles. Finally, an

increasing percentage of newly purchased treated wood poles have been partially or completely pre-assembled, thus limiting the need for utility workers to assemble and/or otherwise work with the poles prior to installation. When taken together, these technological and work place improvements have significantly reduced the potential exposure of utility workers to the preservatives in treated wood poles and cross-arms.

IV. THERE ARE NO WHOLESALE ALTERNATIVES TO TREATED WOOD

- **FIFRA Requires An Evaluation of Economic, Social, and Environmental Costs and Benefits**—When evaluating preservatives such as penta, CCA, and creosote for FIFRA registration and re-registration, the Agency must consider whether the preservative can perform its intended function without causing "unreasonable adverse effects on the environment." See FIFRA Sections 3(c)(5) & 4(a)(2) . The phrase "unreasonable adverse effects on the environment" is defined within FIFRA as "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits" of the use of any preservative. See FIFRA Section 2(bb). This process requires EPA to find that "…[t]he benefits of each use…exceed the risks of use." 49 Fed. Reg. 28666, 28667 (July 13, 1984). As the Agency has previously explained, an economic cost and benefit analysis for pressure-treated wood, such as wood treated with penta, CCA, or creosote, specifically includes an evaluation of preservative cancellation scenarios "…in terms of the cost of substitution of remaining registered wood preservatives or *alternative materials*." Id. at 28672 (emphasis added).

- **Alternative Materials Are Not Viable Substitutes for Treated Wood**—While manufacturers of alternatives to treated wood poles argue that there are viable and readily available alternatives that can replace treated wood used in commercial and industrial uses, this simply is not the case.

- Treated wood poles are preferred by utilities because they are more practical, functional, and economically acceptable than other alternatives—they are a natural and renewable resource, unlike most alternatives.

- While electric utilities continue to evaluate alternative pole materials (e.g., steel, fiberglass, concrete) and preservative types (e.g., ACQ), the fact remains that CCA, penta, and creosote are staple treatment preservatives and the preferred choices throughout the industry because they are the most reliable, effective, versatile, and cost-effective options. Many treated wood "alternatives" have been used by electric utilities and have subsequently been rejected because of unreliability, safety, and

practicality concerns (e.g., difficult to climb, not proven effective over time, risk of electrocution).

- The three major preservatives currently used to treat utility poles, penta, CCA, and creosote, have been in use for decades. During that period, poles treated with these preservatives have established a documented record of long-term performance and a reputation for safety and reliability throughout the industry. Treated wood poles manufactured from a sustainable natural resource that is both abundant and reasonably priced, and that commonly last for several decades in service, provide the most cost-effective alternative for modern electric utility construction and maintenance needs.

- **Safety, Reliability & Cost-Effectiveness**—The most critical factors in an electric utility's selection of materials for transmission and distribution poles are safety, reliability, and functionality. Treated wood poles are superior to the alternatives in all three categories, and they are more cost-effective.

- **Safety**—Worker safety is of paramount concern to all utilities when it comes to construction and maintenance of their electric lines. The more familiar utility workers are with the proper handling of the material being utilized for line construction and maintenance, the less chance of incurring harm or injury. With decades of experience, utilities are extremely familiar with the proper use and handling of treated wood poles. The utility industry has limited experience with the specific non-wood alternatives being promoted by wood's competitors in distribution applications, such as thin-walled steel. Thus, the potential for safety problems can increase significantly when alternative materials are substituted for treated wood.

- Many electric utilities have concerns about using steel distribution poles because of potential electrocution risks and grounding concerns. Non-wood poles pose potentially greater risks for failure (e.g., total collapse) in vehicular accidents than do treated wood poles, thus potentially causing more disruption to the reliable provision of electrical services.

- Due to their heavy weight, concrete poles pose special operational problems and can cause more environmental damage when attempting to set the poles, especially in off-road locations.

- **Reliability & Operational Factors**—The track record of treated wood poles is far superior to that of treated wood alternatives. While alternative pole manufacturers may claim a product service life of 70-80 years, such claims remain unsubstantiated. Alternatives generally have not been in use for longer than 15-20 years, and

certainly not on the scale that would be necessary if the proven and reliable wood preservatives – penta, CCA and creosote – were no longer available.

- A significant problem can be encountered when attempting to integrate the use of alternative products into the existing electric grid that is largely comprised of treated wood poles. For example, much of the electric utility cooperative infrastructure is based on Grade C construction. In grade C construction, alternative materials such as steel and concrete cannot be substituted for wood on a one-to-one basis. This fact was directly addressed in a July 1999 USDA publication entitled "Summary of Items of Engineering Interest," prepared by USDA's Rural Utilities Service. RUS cautioned that "there should not be a direct substitution of wood poles with steel poles or concrete poles if the original line design was based on Grade C construction."

- Steel and concrete poles have lower insulating properties or "Basic Insulating Levels" ("BIL") than does treated wood. Reduced BIL can result in more lightning "flashovers" which, in turn, cause increased power outages. To minimize these service disruptions when using steel or concrete poles, it is necessary to use additional lighting arresters, which further increases the costs of using these alternatives.

- Hardware and ancillary equipment on existing treated wood poles (e.g., insulators on pole cross arms) are not directly transferable to poles made from alternative materials. Substantial modification of existing hardware or the purchase of entirely new hardware would be required to accommodate the use of such materials.

- **Cost-Effectiveness**—A switch to alternative material poles will require revisions to utilities' methods and practices addressing the installation, climbing, safety, maintenance, and replacement of poles by utility linemen, thereby increasing the expense of and complicating worker training.

- A substantial portion of every utility's construction and maintenance budget is spent on their overhead infrastructure. Treated wood's economical initial cost, combined with a documented service record of up to 70 years, has a direct impact on keeping a utility's operating expenses lower. The higher costs of alternative materials would ultimately be passed on to customers in the form of higher electricity rates.

- If required to use less effective alternative materials, there likely will be a marked reduction in the reliability of the nation's electric distribution system, coupled with significant increases in replacement and repair costs associated with the less effective support structures.

- Over 700 of the electric utilities currently using treated wood are distribution cooperatives. These small utilities account for approximately one-third of all treated wood distribution poles currently in use in the country. Lack of readily available treated wood poles would be particularly severe and have a significant economic impact on these smaller entities, many of which are small businesses under Small Business Regulatory Enforcement Fairness Act ("SBREFA").

V. TREATED WOOD IS THE MOST ENERGY EFFICIENT MATERIAL FOR CONSTRUCTION OF TRANSMISSION AND DISTRIBUTION LINES

- Several studies performed in the last decade confirm that, from a life cycle management perspective, treated wood is the most cost-effective, functional, and energy-efficient material for the construction of overhead utility lines. As noted above, EPA must take into account, among other things, the "environmental costs and benefits" during the registration process. See FIFRA Section 2(bb). *The studies summarized below make clear that, in comparison to treated wood alternatives, treated wood offers the most energy efficient, environmentally beneficial and cost-effective option for use as electric utility transmission and distribution structures*.

- When evaluating the environmental costs and benefits of treated wood poles versus alternative materials, a full life cycle analysis should be undertaken, accounting for environmental factors such as the effects of producing the materials that go into the poles (e.g., wood, steel, concrete), water and air quality impacts, and factors such as varying life spans and maintenance costs for alternative pole materials.

- **Künniger and Richter Swiss Case Study:** In 1995, the Swiss Federal Laboratories for Materials Testing and Research published a life cycle analysis of utility poles. T. Künniger and K. Richter, "Life Cycle Analysis of Utility Poles: A Swiss Case Study," Swiss Federal Laboratories for Materials Testing and Research, Wood Department (1995) (Attachment A). This case study was conducted to better evaluate the ecological consequences of wooden utility poles and their alternatives of reinforced concrete and steel. Energy and material flows connected with utility poles and transmission lines in Switzerland were analyzed, using several evaluation criteria, including: (1) primary energy consumption, (2) global warming potential, (3) photochemical ozone creation, (4) acidification, (5) nutrification, (6) human toxicity, and (7) ecotoxicity.

- The entire life cycle of the poles was analyzed, including extraction and processing of raw materials, energy supply, pole production and setup, maintenance, dismounting, recycling, and disposal. All calculations were made for a service life of

60 years. **The life cycle analysis showed that treated roundwood utility poles have several environmental benefits as compared to reinforced concrete and tubular steel, including low input of fossil energy, the positive aspects of wood as a material with a closed carbon cycle, and small contribution to the greenhouse effect. The report concludes that "treated wooden poles are fulfilling the resolution of the Earth Summit of Rio de Janeiro in 1992, where the reduction of greenhouse gases and an increased utilization of renewable resources was given priority."** *Id. at 80 (emphasis added).*

- These findings are reiterated in a 2001 North American Wood Pole Coalition Technical Bulletin that examined recent domestic and international research comparing energy intensity and related global warming consequences of treated wood and its alternatives. North American Wood Pole Coalition/Roger A. Sedjo, Ph.D., Technical Bulletin, "Wood Materials Used to Reduce Greenhouse Gases (GHG): An Examination of Wooden Utility Poles" (October 2001) (Attachment B). The report concludes that:

> **[w]ithout exception, studies have found that total energy requirements associated with wood materials are considerably lower than those of commonly substituted materials. The substitution of high-energy-intensive materials for low-energy-using wood materials would contribute substantially to an overall increase in carbon dioxide emissions**.

Id. at 1; see also id. at 2, 6 (emphasis added).

- **Erlandsson, Ödeen, and Edlund Life Cycle Analysis:** This 1992 Swedish study examines the environmental life cycle analysis of treated wood, concrete, steel, and aluminum utility transmission poles, reporting their results in terms of "energy use." M. Erlandsson, K. Ödeen, and M. Edlund, "Environmental Consequences of Various Materials in Utility Poles—A Life Cycle Analysis" (1992) (Attachment C). The study found that a high energy use is often closely related to pollution by materials hazardous to the environment, which means that, in general, a product that needs a low energy use to produce can be assumed to have low environmental impact. Id. at 3. The analysis showed that energy use for producing treated wood poles is significantly less than that required for steel, concrete, and aluminum poles—in some cases it was even found to be more than an order of magnitude lower.

- **Universal Forest Products, Inc. Energy Consumption Analysis:** This study compared the *quantity* of energy required to produce CCA-treated wood to that required to produce other alternative building materials (e.g., concrete and steel). S. Conklin and I. Stalker, "Energy Consumption in CCA Treated Wood Manufacture," Universal Forest Products, Inc. (1996) (Attachment D). The report explains that

although "total environmental impacts of using a particular material include resource issues such as depletion and renewability, solid waste generation, impacts to air and water quality, and the ultimate disposal of the product, energy provides a common thread between many of these elements," and "[e]nergy efficiency is also widely recognized as an achievement in and of itself." Id. at 75.

- **The paper concludes that "[t]reated wood is a superior building material from the perspective of energy efficiency"—the quantity of energy required to produce CCA-treated wood utility poles is as much as 13 times less than the energy required to produce alternative poles.** Id. at 82, 90. Replacing CCA-treated wood with alternative materials would have a significant, negative, environmental impact, increasing annual carbon dioxide emissions by 6.2 billion kilograms. Id. at 74. In sum,

  > **[t]hose who believe that the use of treated wood is bad for the environment should be challenged to consider the broader, long-term consequences of the use of alternative building products. Failure to do so will be counterproductive and ultimately damaging to the environment** . . . . Treated wood saves energy, treated wood is good for the environment, and yes, treated wood still saves trees.

  Id. at 83 (emphasis added).

- **Engineering Data Management, Inc. Study:** According to a 1997 study performed by Engineering Data Management, Inc. ("EDMI") of Fort Collins, Colorado, treated wood poles are a cost-effective choice for most overhead utility line applications when compared to alternatives such as steel, fiberglass, and concrete. See "Utility Structure Competitive Products Report Series," Report No. 5 "Life Cycle Economics," Engineering Data Management, Inc. (1997) (Abstract attached as Attachment E). EDMI was contracted to conduct its 1997 study to determine the economic advantages and disadvantages of treated wood, steel, fiberglass, and spun concrete poles. The life cycle cost analysis performed by EDMI considered the following six factors: (1) environmental conditions, (2) material costs and availability, (3) construction costs, (4) projected service life, (5) inspection costs and frequency, and (6) maintenance costs and frequency.

- EDMI concluded that post-installation cost differences among treated wood, steel, fiberglass, and spun concrete poles are, in many cases, not great. The major factor in determining the economic viability of utility poles, therefore, is the initial cost for materials and installation labor. EDMI concluded that for poles of most sizes, treated wood poles tend to have the lowest construction costs. Therefore, in most utility applications, treated wood poles, as compared to steel, fiberglass, and

concrete, remain the most cost-effective material in terms of both initial costs and total life cycle costs.

- **NYSEG Wood, Concrete, and Steel Comparison Project:** Begun in 1988, and spanning almost a decade, this research, development, and demonstration project explored the relative merits of steel, prestressed concrete, and laminated wood poles as a direct alternative to traditional treated roundwood poles. NYSEG, "Wood, Concrete, and Steel Comparison Research Development and Demonstration Project, Final Report" (July 1997) (Attachment F). The project's evaluation covered: (1) total installed cost, (2) long-term durability, and (3) suitability for future use on the NYSEG transmission system. Id. at 3.

- The project concluded that traditional roundwood poles were the least expensive pole option, followed by laminated wood, steel, and the most costly, prestressed concrete. All of the manufactured poles were considered easier to work with by the crews due to uniform size and weight, but concrete was found to be the most difficult to work with because of its weight and rigidity (it was, however, found to be the most durable option due to its density).

- The project finds that "[w]ithout a doubt traditional roundwood is the material of choice for the normal or standard transmission facility. However, at times, we must engineer around the norm due to environmental, operational, maintenance, real estate, time schedules, and other issues." Id. at 7. **Additionally, if pole materials were compared "…based solely on the cost of the material for the bulk of the transmission facilities constructed…the only decision which would be reached would be to use traditional, chemically treated, roundwood poles…[i]n our industry cost has traditionally been the overwhelming consideration in selection of a material for transmission structures and cost becomes more and more a factor in the atmosphere surrounding our industry today."** Id. at 8 (emphasis added).

- **Wood Materials Used as a Means to Reduce Greenhouse Gases:** A 2002 report prepared by Roger Sedjo, Senior Fellow Resources for the Future, examined a number of studies, including some summarized above, comparing the total life cycle energy utilization of the use of wood products, including wood poles, with the use of substitute materials, such as steel, concrete, bricks and aluminum (published in *Mitigation and Adaptation Strategies for Global Change* 7: 191-200, 2002, Attachment G). This report concludes that "**[w]ithout exception all the studies found that the total energy requirements associated with wood materials are substantially lower than those of other commonly substituted materials**." *Id*. at 198 (emphasis added).

- The report found that the estimated effects of converting wood poles to steel poles in the U.S. "shows that, although the GHG [Green House Gas] emissions associated with pole conversion were modest compared to the national total, they were nevertheless a significant portion of US annual emissions." The report concludes by stating that "**[m]ore broadly, these studies provide empirical confirmation of concepts developed in the IPCC TAR (IPCC 2001), whereby the submission of high energy intensive materials for low-energy-using wood materials contributes substantially to the overall increase of CO_2 emissions through their overall higher energy requirements**." *Id*. at 199 (emphasis added).

VI. FAILURE TO RE-REGISTER THE PRESERVATIVES WOULD CAUSE SEVERE DISRUPTIONS IN THE RELIABLE AND COST-EFFECTIVE PROVISION OF ELECTRICAL SERVICES

- The bottom line is that treated wood offers the most energy-efficient, functional, cost-effective and practical material for use by electric utilities in providing electrical services to the public. The re-registration of penta, CCA, and creosote for use in treated wood transmission and distribution poles is absolutely essential to the ability of electric utilities to continue to provide reliable electric power delivery services across the country.

- Failure to re-register these preservatives would lead to potentially serious interruptions in current electrical service and significantly hamper the electric utility industry's ability to extend service.

- The lack of reliable and readily available treated wood support structures would prevent electric utilities from fulfilling their legal obligations under state and regional public service commission laws to ensure continuous and reliable provisions of electrical service to rate payers ("obligation to serve").

- For all the above reasons, USWAG strongly urges EPA to re-register penta, CCA and creosote for continued use in the manufacture of treated wood poles for the transmission and distribution of electric power.

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