



# Waterpower XVI

*The Waterpower XVI conference and exhibition convenes in Spokane, Wash., this July. This event features multiple opportunities to learn about new technologies, approaches, and services being used to improve hydro. Here is a sampling of the information that awaits attendees.*

The Waterpower XVI conference and exhibition is July 27-30, 2009, in Spokane, Wash. The theme is “New Roles for Hydro in a Changing World.” The focus of the conference’s program and exhibition is new technologies and innovations.

### AEP uses synthetic lubricant at six hydro plants

American Electric Power (AEP) has replaced the oil-based lubricants in equipment at six of its 17 hydro plants with UCON Trident AW hydraulic fluid, says Terry A. Benson, maintenance supervisor for the northern hydro generation division of AEP. This lubricant, manufactured by the Dow Chemical Company and supplied by American Chemical Technologies Inc., is water-soluble, fire-resistant, and heavier than water.

American Chemical Technologies is exhibiting at the Waterpower conference.

AEP is committed to being an environmentally friendly company, Benson says. This commitment drove AEP to choose six plants at which to make the conversion from petroleum-based lubricants to the UCON Trident AW hydraulic fluid. The plants are 4-MW Elkhart in Indiana, 1-MW

Mottville in Michigan, 48-MW Racine in Ohio, 22.5-MW Reusens in Virginia, 5-MW Twin Branch in Indiana, and 19-MW Winfield in West Virginia.

The utility’s use of this lubricant varies by plant: Elkhart, trashrake equipment and wicket gate actuator tanks for all three units; Mottville, wicket gate actuator tank for one unit, with the other units scheduled to be converted in the summer of 2009; Racine, ejector container of the trashraking system, with plans to convert the trashrake in the spring of 2009, as well as the tail gate screwjack system gear boxes for one unit, with the other unit scheduled to be converted later this year; Reusens and Winfield, the knuckle-boom crane; and Twin Branch, the trashrake equipment.

UCON Trident AW is a fully synthetic polyalkylene glycol (PAG) lubricant, American Chemical Technologies says. The UCON Trident AW formulation does not contain any chemicals on the Comprehensive Environmental Response, Compensation,

and Liability Act (or CERCLA, also known as Superfund) list of hazardous substances. As such, leaks require minimal reporting.

According to the U.S. Fish and Wildlife Service, UCON Trident AW meets requirements as “relatively harmless” or “practically non-toxic” to fish and other aquatic wildlife.

Since the equipment was converted at the six plants mentioned above, AEP has seen no significant change in how the equipment operates. The only exception is the more northern plants (Indiana and Michigan), where equipment operation upon initial start up is slightly sluggish and slow during cold months of the year, Benson says. However, once the fluid warms up, the equipment operates with no noticeable sluggishness, he says.

One drawback to the use of this hydraulic fluid is that it is more expensive than the biodegradable oil AEP uses and nearly twice as expensive as typical hydraulic oil, Benson says. Another added cost for AEP is the company’s requirement to add desiccant breathers for the applications in wicket gate actuator tanks. This equipment is designed to remove condensation formed during temperature changes, Benson says. AEP must perform regular sampling of the lubricant and change the desiccant as needed, which is an added cost, he says.



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