

## A change of perspective

by Bruce Polkowsky, NPS

Most of the IMPROVE community may now know, but some thought I should "make it official." I have changed jobs from the U.S. EPA to the National Park Service. I worked for the EPA since May 1977, starting in North Carolina, with a short time in Region 9 (San Francisco) during graduate studies, then back in North Carolina.

I began working on visibility issues after the 1980 rules were promulgated and EPA was sued to implement them since the states, for the most part, had not acted on them. It was this litigation and EPA's actions to respond to, that provided for the birth of the IMPROVE monitoring network. Since that time, EPA has always promised to supplement the 1980 rules to address regional haze. My work at EPA had been associated with implementing the 1980 rules and working toward the issuance of the regional haze rules announced in April of this year. Developing the technical foundation, part of which is the large database that IMPROVE has accumulated through the years, and helping EPA management understand visibility issues were my main duties. During the development of the final regional haze regulation, I felt I would enjoy a new perspective on my work. I was looking for a change that would allow me to see how the new regulation would affect a land management agency. Working with my friends at the National Park Service was the perfect fit.

In many ways I am still connected with EPA, and look forward to working with my former agency, as well as states and the private sector, on a solution to challenges of implementing the rule. How to define "natural conditions," the appropriate first long-term strategy goals, and the technical issues of tracking regional conditions will keep everyone busy for quite some time. I can be contacted at:

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## Mt. Zirkel and the Hayden Station's Retrofit

by Dan Ely, State of Colorado

The U.S. Forest Service (USFS) concluded in its July 1993 certification of visibility impairment letter to the State of Colorado, that visibility impairment may have existed in the Mt. Zirkel Wilderness Area, and that local existing stationary sources, the Craig and Hayden power stations, contributed to the problem. This preliminary conclusion was made, in part, based on data from IMPROVE protocol monitoring conducted near the wilderness area. The Mt. Zirkel Visibility Study was developed collaboratively between interested parties to collect additional information. The study was funded by the owners of Craig and Hayden, and jointly managed by the State of Colorado, the owners of Craig and Hayden, and the USFS. The Environmental Protection Agency (EPA) provided technical advice throughout the study process, which was completed July 15, 1996.

By law, if visibility impairment can be reasonably attributed to existing stationary sources, a Best Available Retrofit Technology (BART) analysis must be conducted, and may result in emission limitations. At this time Colorado has not used the information to make a decision regarding Hayden or Craig. Nevertheless, the certification regarding Hayden has been resolved.

The groundwork for resolution of Hayden occurred when the Sierra Club, the State of Colorado, the owners of Hayden Station, and the EPA/Department of Justice executed the Hayden Consent Decree in May 1996. The Decree is intended to resolve a number of issues, including a successful Sierra Club lawsuit against the Hayden Station, the state's visibility regulatory program in relation to Hayden, and an EPA complaint against the facility. In addition, the Decree is intended to make progress toward reducing acid deposition in the Mt. Zirkel Wilderness Area. Colorado believes the significant emission reductions (85% SO<sub>2</sub>, 40%-60% NO<sub>x</sub>, and new baghouses for particulate) will effectively eliminate visibility impairment in the wilderness area that could be associated with the Hayden Station. The state further believes that the Hayden Consent Decree effectively resolves the certification of impairment brought by the USFS against Hayden Station. The USFS has agreed that its complaint against Hayden has been satisfied.

Since then, the owners of Hayden (Public Service Company of Colorado, Salt River Project, and PacifiCorp) have been busy retrofitting the two units with new control equipment. The NO<sub>x</sub>, SO<sub>2</sub>, and particulate control systems for Unit #1 were tied-in during an outage in the fall of 1998 and the unit started up in December. Flue gas exiting Unit #1's boiler was routed to the new baghouse and for one to two weeks the baghouse was "cured" -- gradually each compartment within the baghouse and the bags within each compartment developed a layer of ash to allow the bags to effectively capture the coal ash. Also during this time, flue gas was routed through the new lime spray dryer to reduce SO<sub>2</sub>. NO<sub>x</sub> controls were built into the boiler via low-NO<sub>x</sub> burners. The system for Unit #2 commenced its tie-in during an outage in the spring of 1999.

While it is too early to see results, it is important to track the effect of the emission reductions on acid levels in the snowpack, and SO<sub>2</sub> concentrations and visibility impairment near the Mt. Zirkel Wilderness Area. Funding for and the collection of these data are provided by the USFS (via funding of the IMPROVE protocol site at Mt. Zirkel), the US Geological Survey, EPA, and the State of Colorado. For more information, contact:

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