

1999). This new treatment information added to the treatment options available to utilities for controlling DBPs beyond the requirements of the Stage 1 DBPR.

New data on the health effects of DBPs also influenced the Advisory Committee's recommendation to further regulate DBPs. Although bladder cancer risks were the focus of the Stage 1 M-DBP negotiations, potential reproductive and developmental health effects were central to the Stage 2 M-DBP Advisory Committee discussions. Recent human epidemiology studies and animal toxicology studies have both shown associations between chlorinated drinking water and reproductive and developmental health effects such as spontaneous abortion, stillbirth, neural tube defects, pre-term delivery, intrauterine growth retardation, and low birth weight. A critical review of the epidemiology literature pertaining to reproductive and developmental effects of exposure to DBPs completed in 2000 (Reif *et al.* 2000) concluded that "the weight of evidence from the epidemiological studies also suggests that they [DBPs] are likely to be reproductive toxicants in humans under appropriate exposure conditions * * * and that measures aimed at reducing the concentrations of byproducts could have a positive impact on public health."

While there has been substantial research to date, the Advisory Committee recognized that significant uncertainty remains regarding the risk associated with DBPs in drinking water. The Advisory Committee carefully considered the analyses described previously, as well as costs and potential impacts on public water systems, and concluded that a targeted protective public health approach should be taken to address exposure to DBPs beyond the requirements of the Stage 1 DBPR. After reaching this conclusion, the Advisory Committee developed an Agreement in Principle (USEPA 2000g) that laid out their recommendations on how to further control DBPs in public water systems.

In the Agreement in Principle, the Advisory Committee recommended maintaining the MCLs for TTHM and HAA5 at 0.080 mg/L and 0.060 mg/L respectively, but changing the compliance calculation in two phases to facilitate systems moving from the running annual average (RAA) calculation to a locational running annual average (LRAA) calculation. In the first phase, systems would continue to comply with the Stage 1 DBPR MCLs as RAAs and, at the same time, comply with MCLs of 0.120 mg/L for TTHM and 0.100 mg/L for HAA5 calculated as

LRAAs. RAA calculations average all samples collected within a distribution system over a one-year period, but LRAA calculations average all samples taken at each individual sampling location in a distribution system during a one-year period. Systems would also carry out an Initial Distribution System Evaluation (IDSE) to select new compliance monitoring sites that more accurately reflect higher TTHM and HAA5 levels occurring in the distribution system. The second phase of compliance would require MCLs of 0.080 mg/L for TTHM and 0.060 mg/L for HAA5 calculated as LRAAs at individual monitoring sites identified through the IDSE.

The Agreement in Principle also provided recommendations for simultaneous compliance with the LT2ESWTR so that the reduction of potential health hazards of DBPs does not compromise microbial protection. The recommendations for the LT2ESWTR included treatment requirements for *Cryptosporidium* based on the results of source water monitoring, a toolbox of options for providing additional treatment at high risk facilities, use of microbial indicators to reduce *Cryptosporidium* monitoring burden on small systems, and future monitoring to determine if source water quality remains constant after completion of initial monitoring. The Agreement also encouraged EPA to develop guidance and criteria to facilitate the use of UV light for compliance with drinking water disinfection requirements. The complete text of the Agreement in Principle (USEPA 2000g) can be found at the edocket Web site (<http://www.epa.gov/edocket>).

After extensive analysis and investigation of available data and rule options considered by the Advisory Committee, EPA is proposing a Stage 2 DBPR control strategy that is consistent with the key elements of the Agreement in Principle signed in September 2000 by the participants in the Stage 2 M-DBP Advisory Committee. EPA determined that the risk-targeting measures recommended in the Agreement in Principle will require only those systems with the greatest risk to make treatment and operational changes and will maintain simultaneous protection from the potential health hazards of DBPs and microbial contaminants. EPA has carefully evaluated and expanded upon the recommendations of the Advisory Committee to more fully develop today's proposal. EPA also made simplifications where possible to minimize complications for public

water systems as they transition to compliance with the Stage 2 DBPR while expanding public health protection. The proposed requirements of the Stage 2 DBPR are described in detail in section V of this preamble.

C. How Were Stakeholders Involved in Developing the Stage 2 DBPR?

1. Federal Advisory Committee Process

The Stage 2 M-DBP Advisory Committee consisted of 21 organizational members representing EPA, State and local public health and regulatory agencies, local elected officials, Native American Tribes, large and small drinking water suppliers, chemical and equipment manufacturers, environmental groups, and other stakeholders. Technical support for the Advisory Committee's discussions was provided by a technical working group established by the Advisory Committee. The Advisory Committee held ten meetings to discuss issues pertaining to the Stage 2 DBPR and LT2ESWTR from September 1999 to July 2000 which were open to the public. There was also an opportunity for public comment at each meeting.

In September 2000, the Advisory Committee signed the Agreement in Principle, a full statement of the consensus recommendations of the group. The agreement was published by EPA in a December 29, 2000 **Federal Register** notice (65 FR 83015), together with the list of committee members and their organizations. The Agreement is divided into Parts A and B. The recommendations in each part stand alone and are independent of one another. The entire Advisory Committee reached consensus on Part A, which contains provisions that directly apply to the proposed Stage 2 DBPR and LT2ESWTR. The full Advisory Committee, with the exception of the National Rural Water Association (NRWA), also agreed to Part B, which has recommendations for future activities by EPA in the areas of distribution systems and microbial water quality criteria.

2. Other Outreach Processes

EPA received valuable input from small system operators as part of an Agency outreach initiative under the Regulatory Flexibility Act (RFA). EPA also conducted outreach conference calls to solicit feedback and information from Small Entity Representatives (SERs) on issues related to Stage 2 DBPR impacts on small systems. The Agency consulted with State, local, and Tribal governments on the proposed Stage 2 DBPR. Section VIII includes a complete