

are consistent with increased tap water consumption of older children. However, due to data limitations, this observation could not be adequately analyzed. Asymptomatic infection, especially in underdeveloped communities, can have a substantial effect on childhood growth (Bern *et al.*, 2002).

Cryptosporidiosis appears to be more prevalent in populations, such as children, that may not have established immunity against the disease and may be in greater contact with environmentally contaminated surfaces (DuPont *et al.*, 1995). In the United States, children aged one to four years are more likely than adults to have the disease. The most recent reported data on cryptosporidiosis shows the occurrence rate (for the year 1999) is higher in children ages one to four (3.03 incidence rate per 100,000) than in any adult age group (CDC, 2001). Evidence from blood sera antibodies collected from children during the 1993 Milwaukee outbreak suggest that children had greater levels of *Cryptosporidium* infection than predicted for the general community (based on the random-digit dialing telephone survey method) (McDonald *et al.*, 2001).

Data indicate a lower incidence of cryptosporidiosis infection during the first year of life. This is attributed to breast-fed infants consuming less tap water and, hence, having less exposure to *Cryptosporidium*, as well as the possibility that mothers confer short term immunity to their children. For example, in a survey of over 30,000 stool sample analyses from different patients in the United Kingdom, the one to five year age group suffered a much higher infection rate than individuals less than one year of age. For children under one year of age, those older than six months of age showed a higher rate of infection than individuals aged less than six months (Casemore, 1990). Similarly, in the U.S., of 2,566 reported *Cryptosporidium* illnesses in 1999, 525 occurred in ages one to four (incidence rate of 3.03 per 100,000) compared with 58 cases in infants under one year (incidence rate of 1.42 per 100,000) (CDC, 2001).

An infected child may spread the disease to other children or family members (Heijbel *et al.*, 1987, Osewe *et al.*, 1996). Millard *et al.* (1994) documented greater household secondary transmission of cryptosporidiosis from children than from adults to household and other close contacts. Children continued to shed oocysts for more than two weeks

(mean 16.5 days) after diarrhea cessation (Tangerman *et al.*, 1991).

While *Cryptosporidium* may have a disproportionate effect on children, available data are not adequate to distinctly assess the health risk for children resulting from *Cryptosporidium*-contaminated drinking water. In assessing risk to children when evaluating regulatory alternatives for the LT2ESWTR, EPA assumed the same risk for children as for the population as a whole.

Section VI of this preamble presents the regulatory alternatives that EPA evaluated for the proposed LT2ESWTR. Among the four alternatives the Agency considered, three involved a risk-targeting approach in which additional *Cryptosporidium* treatment requirements are based on source water monitoring results. A fourth alternative involved additional treatment requirements for all systems.

The alternative requiring additional treatment by all systems was not selected because of concerns about feasibility and because it imposed costs but provided few benefits to systems with high quality source water (*i.e.*, relatively low *Cryptosporidium* risk). The three risk-targeting alternatives were evaluated based on several factors, including costs, benefits, net benefits, feasibility of implementation, and other specific impacts (*e.g.*, impacts on small systems or sensitive subpopulations).

The proposed alternative was recommended by the M-DBP Federal Advisory Committee and selected by EPA as the Preferred Regulatory Alternative because it was deemed feasible and provides significant public health benefits in terms of avoided illnesses and deaths. EPA's analysis of benefits and costs indicates that the proposed alternative ranks highly among those evaluated with respect to maximizing net benefits, as shown in the LT2ESWTR Economic Analysis (USEPA 2003a). This document is available in the docket for this action.

The result of the LT2ESWTR will be a reduction in the risk of illness for the entire population, including children. Because available evidence indicates that children may be more vulnerable to cryptosporidiosis than the rest of the population, the LT2ESWTR may, therefore, result in greater risk reduction for children than for the general population.

The public is invited to submit or identify peer-reviewed studies and data, of which EPA may not be aware, that assessed results of early life exposure to *Cryptosporidium*.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This rule is not a "significant energy action" as defined in Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. This determination is based on the following analysis.

The first consideration is whether the LT2ESWTR would adversely affect the supply of energy. The LT2ESWTR does not regulate power generation, either directly or indirectly. The public and private utilities that the LT2ESWTR regulates do not, as a rule, generate power. Further, the cost increases borne by customers of water utilities as a result of the LT2ESWTR are a low percentage of the total cost of water, except for a very few small systems that might install advanced technologies and then need to spread that cost over a narrow customer base. Therefore, the customers that are power generation utilities are unlikely to face any significant effects as a result of the LT2ESWTR. In sum, the LT2ESWTR does not regulate the supply of energy, does not generally regulate the utilities that supply energy, and is unlikely to affect significantly the customer base of energy suppliers. Thus, the LT2ESWTR would not translate into adverse effects on the supply of energy.

The second consideration is whether the LT2ESWTR would adversely affect the distribution of energy. The LT2ESWTR does not regulate any aspect of energy distribution. The utilities that are regulated by the LT2ESWTR already have electrical service. As derived later in this section, the proposed rule is projected to increase peak electricity demand at water utilities by only 0.02 percent. Therefore, EPA estimates that the existing connections are adequate and that the LT2ESWTR has no discernable adverse effect on energy distribution.

The third consideration is whether the LT2ESWTR would adversely affect the use of energy. Because some drinking water utilities are expected to add treatment technologies that use electrical power, this potential impact is evaluated in more detail. The analyses that underlay the estimation of costs for the LT2ESWTR are national in scope and do not identify specific plants or utilities that may install treatment in response to the rule. As a result, no analysis of the effect on specific energy suppliers is possible with the available