who do not defeat the child-resistant feature, the notification shall state that, although the child did not defeat the child-resistant feature, the child may be able to do so in the future.

(g) *Data collection and recording*. Except for recording the times required for the children to activate the signal, recording of data should be avoided while the children are trying to operate the lighters, so that the tester's full attention is on the children during the test period. If actual testing is videotaped, the camera shall be stationary and shall be operated remotely in order to avoid distracting the children. Any photographs shall be taken *after* actual testing and shall simulate actual test procedure(s) (for example, the demonstration). The following data shall be collected and recorded for each child in the 100-child test panel:

(1) Sex (male or female).

(2) Date of birth (month, day, year).

(3) Age (in months, to the nearest month, as specified in § 1210.4(a)(4)).

(4) The number of the lighter tested by that child.

(5) Date of participation in the test (month, day, year).

(6) Location where the test was given (city, state, country, and the name of the site or an unique number or letter code that identifies the test site).

(7) The name of the tester who conducted the test.

(8) The elapsed time (to the nearest second) at which the child achieved any operation of the surrogate signal in the first 5-minute test period.

(9) The elapsed time (to the nearest second) at which the child achieved any operation of the surrogate signal in the second 5-minute test period.

(10) For a single pair of children from each 100-child test panel, photograph(s) or video tape to show how the lighter was held in the tester's hand, and the orientation of the tester's body and hand to the children, during the demonstration.

(h) *Evaluation of test results and acceptance criterion*. To determine whether a surrogate lighter resists operation by at least 85 percent of the children, sequential panels of 100 children each, up to a maximum of 2 panels, shall be tested as prescribed below.

(1) If no more than 10 children in the first 100-child test panel successfully operated the surrogate lighter, the lighter represented by the surrogate lighter shall be considered to be resistant to successful operation by at least 85 percent of the child test panel, and no further testing is conducted. If 11 through 18 children in the first 100-child test panel successfully operate the surrogate lighter, the test results are inconclusive, and the surrogate lighter shall be tested with a second 100-child test panel in accordance with this § 1210.4. If 19 or more of the children in the first 100-child test panel successfully operated the surrogate lighter, the lighter represented by the surrogate shall be considered not resistant to successful operation by at least 85 percent of the child test panel, and no further testing is conducted.

(2) If additional testing of the surrogate lighter is required by § 1210.4(h)(1), conduct the test specified by this § 1210.4 using a second 100-child test panel and record the results. If a total of no more than 30 of the children in the combined first and second 100-child test panels successfully operated the surrogate lighter, the lighter represented by the surrogate lighter shall be considered resistant to successful operation by at least 85 percent of the child test panel, and no further testing is performed. If a total of 31 or more children in the combined first and second 100-child test panels successfully operate the surrogate lighter, the lighter represented by the surrogate lighter shall be considered not resistant to successful operation by 85 percent of the child test panel, and no further testing is conducted.

TABLE 1—EVALUATION OF TEST RESULTS—§ 1210.4(E)

Test panel	Cumulative Number of Children	Successful Lighter Operations		
		Pass	Continue	Fail
1	100	0-10	11-18	19 or more
1	200	11-30	—	31 or more

§ 1210.5 Findings.

Section 9(f) of the Consumer Product Safety Act, 15 U.S.C. 2058(f), requires

the Commission to make findings concerning the following topics and to include the findings in the rule.

(a) *The degree and nature of the risk of injury the rule is designed to eliminate or reduce*. The standard is designed to reduce the risk of death and injury from accidental fires started by children playing with lighters. From 1988 to 1990, an estimated 160 deaths per year resulted from such fires. About 150 of these deaths, plus nearly 1,100 injuries and nearly $70 million in property damage, resulted from fires started by children under the age of 5. Fire-related injuries include thermal burns — many of high severity — as well as anoxia and other, less serious injuries. The annual cost of such fires to the public is estimated at about $385 million (in 1990 dollars). Fires started by young children (under age 5) are those which the standard would be most effective at reducing.

(b) *The approximate number of consumer products, or types or classes thereof, subject to the rule*. The standard covers certain flame-producing devices, commonly known as lighters, which are primarily intended for use in lighting cigarettes and other smoking materials. Lighters may be gas- or liquid-fueled, mechanical or electric, and of various physical configurations. Over 600 million lighters are sold annually to consumers in the U.S.; over 100 million are estimated to be in use at any given time. Over 95 percent of all lighters sold are pocket-sized disposable butane models; of the remaining 5 percent, most are pocket refillable butane models. A small proportion of refillables is comprised of pocket liquid-fuel models; still smaller proportions are represented by table lighters and by ''novelty'' lighters, that is, those having the physical appearance of other specific objects. Approximately 600 million pocket butane disposables (nonrefillable), 15-20 million pocket butane refillables, 5-10 million pocket liquid-fuel refillables, and 1-3 million novelty and other lighters were sold to consumers in 1991. The standard covers disposable lighters, including inexpensive butane refillables, and novelty lighters. Roughly 30 million households have at least one lighter; ownership of more than one lighter is typical, especially among smoking households.

(c) *The need of the public for the consumer products subject to the rule, and the probable effect of the rule on the utility, cost, or availability of such products to meet such need*. Consumers use lighters primarily to light smoking materials. Most other lighting needs that could be filled by matches may also be filled by lighters. Disposable butane lighters are, chiefly by virtue of their low price and convenience, the closest available substitutes for matches. Although matches are found in far more households, lighters have steadily replaced matches since the 1960's as the primary light source among American consumers. The standard generally requires that lighters not be operable by most children under 52 months of age. This would likely be achieved by modifying products to incorporate additional-action switches, levers, or buttons, thereby increasing the difficulty of product activation. Depending on the method of compliance chosen by manufacturers, there could be some adverse effect on the utility of lighters. This may occur to the extent that operation of the products by adult users is made more difficult by the incorporation of child-resistant features. This may lead some consumers to switch to matches, at least temporarily, which could reduce the expected level of safety provided by the standard. In addition, some ''novelty'' lighters will probably be discontinued, due to the technical difficulty of incorporating child-resistant features or designs. Some loss of utility derived from those products by collectors or other users may result, though many novelty models will probably remain on the market. The cost of producing lighters subject to the standard is expected to increase due to manufacturers' and importers' expenditures in the areas of research and development, product redesign, tooling and assembly process changes, certification and testing, and other administrative activities. Total per-unit production costs for the various lighter types may increase by 10-40 percent, with an average of less than 20 percent. Cost increases will likely be passed on to consumers in the form of higher retail prices. Disposable lighters

may increase in price by 10-40 cents per unit; prices of other lighters may increase by as much as $1-3. The estimated average per-unit price increase for all lighters subject to the standard is about 20 cents. The total annual cost of the standard to consumers is estimated at about $90 million. The estimated cost of the standard per life saved is well under $1 million after considering the benefits of reduced injuries and property damage; this is well below the consensus of estimates of the statistical value of life. A wide range of lighter types and models will continue to be available to consumers. As noted above, some models of novelty lighters — all of which account for less than 1 percent of lighters sold — will likely be discontinued; this should not have a significant impact on the overall availability of lighters to consumers.

(d) *Any means of achieving the objective of the order while minimizing adverse effects on competition or disruption or dislocation of manufacturing and other commercial practices consistent with the public health and safety*. The Commission considered the potential effects on competition and business practices of various aspects of the standard, and, as noted below, incorporated some burden-reducing elements into the proposal. The Commission also encouraged and participated in the development of a draft voluntary standard addressing the risk of child-play fires. A draft voluntary safety standard was developed by members of an ASTM task group (now a subcommittee) to address much of the risk addressed by the proposed CPSC rule. This draft voluntary standard contained performance requirements similar, but not identical, to those in the CPSC proposal. Development work on the voluntary standard ceased in 1991; industry representatives requested that the Commission issue the draft ASTM provisions in a mandatory rule. One possible alternative to this mandatory standard would be for the Commission to rely on voluntary conformance to this draft standard to provide safety to consumers. The expected level of conformance to a voluntary standard is uncertain, however; although some of the largest firms may market some child-resistant lighters that conform to these requirements, most firms (possibly including some of the largest) probably would not. Even under generous assumptions about the level of voluntary conformance, net benefits to consumers would be substantially lower under this alternative than under the standard. Thus, the Commission finds that reliance on voluntary conformance to the draft ASTM standard would not adequately reduce the unreasonable risk associated with lighters.

(e) *The rule (including its effective date) is reasonably necessary to eliminate or reduce an unreasonable risk*. The Commission's hazard data and regulatory analysis demonstrate that lighters covered by the standard pose an unreasonable risk of death and injury to consumers. The Commission considered a number of alternatives to address this risk, and believes that the standard strikes the most reasonable balance between risk reduction benefits and potential costs. Further, the amount of time before the standard becomes effective will provide manufacturers and importers of most products adequate time to design, produce, and market safer lighters. Thus, the Commission finds that the standard and its effective date are reasonably necessary to reduce the risk of fire-related death and injury associated with young children playing with lighters.

(f) *The benefits expected from the rule bear a reasonable relationship to its costs*. The standard will substantially reduce the number of fire-related deaths, injuries, and property damage associated with young children playing with lighters. The cost of these accidents, which is estimated to be about $385 million annually, will also be greatly reduced. Estimated annual benefits of the standard are $205-$270 million; estimated annual costs to the public are about $90 million. Expected annual net benefits would therefore be $115-$180 million. Thus, the Commission finds that a reasonable relationship exists between potential benefits and potential costs of the standard.

(g) *The rule imposes the least burdensome requirement which prevents or adequately reduces the risk of injury for which the rule is being promulgated*. (1) In the final rule, the Commission incorporated a number of changes from

the proposed rule in order to minimize the potential burden of the rule on industry and consumers. The Commission also considered and rejected several alternatives during the development of the standard to reduce the potential burden on industry (especially small importers) and on consumers. These alternatives involve different performance and test requirements and different definitions determining the scope of coverage among products. Other alternatives generally would be more burdensome to industry and would have higher costs to consumers. Some less burdensome alternatives would have lower risk-reduction benefits to consumers; none has been identified that would have higher expected net benefits than the standard.

(2) The scope of this mandatory standard is limited to disposable lighters and novelty lighters; it does not apply to ''luxury'' lighters (including most higher priced refillable butane and liquid-fuel models). This is similar but not identical to the scope of a draft voluntary industry standard developed in response to the Commission's advance notice of proposed rulemaking of March 3, 1988 (53 FR 6833). This exclusion significantly reduces the potential cost of the standard without significantly affecting potential benefits.

(3) The Commission narrowed the scope of the final rule with respect to novelty lighters, and considered limiting the scope further to exclude all nondisposable novelty lighters. Though further limiting the scope would ease the potential burden of the standard on manufacturers and importers slightly, inherently less safe non-child-resistant lighters that are considered to be especially appealing to children would remain on the market, thereby reducing the potential safety benefits to the public. The Commission finds that it would not be in the public interest to exclude novelty lighters.

(4) The Commission considered the potential effect of alternate performance requirements during the development of the standard. A less stringent acceptance criterion of 80 percent (rather than the standard's 85 percent) might slightly reduce costs to industry and consumers. The safety benefits of this alternative, however, would likely be reduced disproportionately to the potential reduction in costs. A higher (90 percent) acceptance criterion was also considered. This higher performance level is not commercially or technically feasible for many firms, however; the Commission believes that this more stringent alternative would have substantial adverse effects on manufacturing and competition, and would increase costs disproportionate to benefits. The Commission believes that the requirement that complying lighters not be operable by at least 85 percent of children in prescribed tests strikes a reasonable balance between improved safety for a substantial majority of young children and other potential fire victims and the potential for adverse competitive effects and manufacturing disruption.

(5) The Commission believes that the standard should become effective as soon as reasonably possible. The standard will become effective 12 months from its date of publication in the FEDERAL REGISTER. The Commission also considered an effective date of 6 months after the date of issuance of the final rule. While most lighters sold in the U.S. could probably be made child resistant within 6 months, some disruptive effects on the supply of some imported lighters would result; this could have a temporary adverse impact on the competitive positions of some U.S. importers. The 12-month period in the standard would tend to minimize this potential effect, and would allow more time for firms to design, produce, and import complying lighters. The Commission estimates that there would be no significant adverse impact on the overall supply of lighters for the U.S. market.

(h) *The promulgation of the rule is in the public interest.* As required by the CPSA and the Regulatory Flexibility Act, the Commission considered the potential benefits and costs of the standard and various alternatives. While certain alternatives to the final rule are estimated to have net benefits to consumers, the adopted rule maximizes these net benefits. Thus, the Commission finds that the standard, if promulgated on a final basis, would be in the public interest.