

# Chapter 10: Alternative Regulatory Options

## INTRODUCTION

EPA defined and evaluated a number of alternative Best Technology Available (BTA) options for facilities subject to the proposed §316(b) New Facility Rule. This chapter presents two alternative options that EPA considered for proposal and their costs.

## 10.1 ALTERNATIVE OPTION 1: UNIFORM STANDARDS OPTION

The first alternative option that EPA considered would apply the BTA requirements proposed for estuaries and tidal rivers to all facilities, regardless of location. Under this option, the definition and number of new facilities subject to the rule would not change, but some facilities would incur more stringent compliance requirements. Application of these requirements would ensure that stringent controls, based on the capabilities of closed-cycle recirculating systems, are the nationally applicable minimum for all new CWISs on all water body types. The specific standards under this option would include:

- ▶ reducing total design intake flow to no more than one percent of annual flow or volume of the source water body;
- ▶ reducing maximum design intake velocity to no more than 0.5 feet per second;
- ▶ reducing intake flow to a level commensurate with that which could be attained by a closed-cycle recirculating cooling water system;
- ▶ implementing additional technologies that minimize I&E of fish eggs and larvae and maximize survival of impinged adult and juvenile fish;
- ▶ implementing other requirements as defined by the Director.

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EPA used the same process to develop the estimates for the Uniform Standards Option as was used for the proposed rule. Based on the new facility characteristics, EPA assessed whether a facility is likely to comply with the Uniform Standards Option requirements in the baseline. Assumptions made in this assessment include the following:

- ▶ A facility with a passive screen was assumed to meet the 0.5 fps velocity criteria.
- ▶ A facility using an intake screen only was assumed have a traveling screen without fish handling equipment.
- ▶ A facility with a recirculating system is assumed to meet the one percent intake flow criteria, since most existing facilities (e.g., more than 90 percent of utilities) with recirculating systems would meet the intake flow criteria. Most once-through facilities were also assumed to meet the intake flow criteria since manufacturing facilities typically have much lower intake flows than utilities.
- ▶ All facilities were assumed to have one intake, which seems reasonable for manufacturers since most utilities have one or two intakes and typically use much higher flows.

The unit costs discussed in *Chapter 6: Facility Compliance Costs*, Section 6.1 also were used to develop cost estimates for the Uniform Standards Option requirements. The estimated flow for a facility was important in calculating the cost for a given technology because unit costs for technologies are based on flow. Costing assumptions related to flow for this option are the same as used to estimate the costs of the proposed rule.

Table 10-1 shows the estimated compliance costs under the Uniform Standards Option.

Table 10-1: National Costs of Compliance with the Uniform Standards Option						
Industry Category (Number of Facilities Affected)	One-Time Costs		Recurring Costs			Total
	Capital Technology	Initial Permit Application	O&M	Permit Renewal	Monitoring, Record Keeping & Reporting	
<b>Total Compliance Costs (present value, in millions \$1999)</b>						
Electric Generators (40)	\$25.87	\$1.08	\$50.60	\$1.57	\$15.93	\$95.05
Manufacturing Facilities (58)	\$23.49	\$1.47	\$59.48	\$2.23	\$21.95	\$108.62
<b>Total (98)</b>	<b>\$49.36</b>	<b>\$2.55</b>	<b>\$110.08</b>	<b>\$3.80</b>	<b>\$37.88</b>	<b>\$203.67</b>
<b>Annualized Compliance Costs (in millions \$1999)</b>						
Electric Generators (40)	\$2.08	\$0.09	\$4.08	\$0.13	\$1.28	\$7.66
Manufacturing Facilities (58)	\$1.89	\$0.12	\$4.79	\$0.18	\$1.77	\$8.75
<b>Total (98)</b>	<b>\$3.97</b>	<b>\$0.21</b>	<b>\$8.87</b>	<b>\$0.31</b>	<b>\$3.05</b>	<b>\$16.41</b>

Source: Summary information from Appendix B and the Information Collection Request for Cooling Water Intake Structures, New Facility Proposed Rule, July 2000.

Under the Uniform Standards Option, the present value of total compliance costs is estimated to be \$203.7 million. The 40 electric generators account for \$108.6 million of this total, and the 58 manufacturing facilities for \$95.1 million. Total annualized cost for the 98 facilities is estimated to be \$16.4 million. Of this, \$7.7 million will be incurred by electric generators and \$8.8 million by manufacturing facilities.

## 10.2 ALTERNATIVE OPTION 2: DRY COOLING OPTION

The second alternative option considered by EPA would impose more stringent compliance requirements on the electric generating segment of the industry. It is based in whole or in part on a zero intake-flow (or nearly zero,

extremely low-flow) requirement commensurate with levels achievable through the use of dry cooling systems. New manufacturing facilities would not be subject to these stricter requirements but would have to comply with the standards of the proposed rule.

EPA developed cost equations and curves for dry cooling towers similarly to those for wet cooling towers, relating tower capital and operating and maintenance (O&M) costs to the system's cooling water flow requirement. EPA used the same flow volume used for developing cost estimates for the other options to develop the costs for the Dry Cooling Option.

Table 10-2 shows the estimated compliance costs under the Dry Cooling Option.

<b>Table 10-2: National Costs of Compliance with the Dry Cooling Option</b>						
<b>Industry Category (Number of Facilities Affected)</b>	<b>One-Time Costs</b>		<b>Recurring Costs</b>			<b>Total</b>
	<b>Capital Technology</b>	<b>Initial Permit Application</b>	<b>O&amp;M</b>	<b>Permit Renewal</b>	<b>Monitoring, Record Keeping &amp; Reporting</b>	
<b>Total Compliance Costs (present value, in millions \$1999)</b>						
Electric Generators (40)	\$657.50	\$0.09	\$1,665.52	\$0.09	\$0.00	\$2,323.20
Manufacturing Facilities (58)	\$12.22	\$1.38	\$34.26	\$2.14	\$20.74	\$70.74
<b>Total (98)</b>	<b>\$669.72</b>	<b>\$1.47</b>	<b>\$1,699.78</b>	<b>\$2.23</b>	<b>\$20.74</b>	<b>\$2,393.94</b>
<b>Annualized Compliance Costs (in millions \$1999)</b>						
Electric Generators (40)	\$52.99	\$0.01	\$134.22	\$0.01	\$0.00	\$187.23
Manufacturing Facilities (58)	\$0.98	\$0.11	\$2.76	\$0.17	\$1.67	\$5.70
<b>Total (98)</b>	<b>\$53.97</b>	<b>\$0.12</b>	<b>\$136.98</b>	<b>\$0.18</b>	<b>\$1.67</b>	<b>\$192.93</b>

*Source: Summary information from Appendix B and the Information Collection Request for Cooling Water Intake Structures, New Facility Proposed Rule, July 2000.*

The Dry Cooling Option would be the most expensive of the three regulatory frameworks considered by EPA. Under this option, the present value of total compliance costs is estimated to be almost \$2.4 billion. Total annualized cost for the 98 facilities is estimated to be \$193 million.

Manufacturing facilities would incur the same compliance costs as under the proposed rule, \$5.7 million. The 40 electric generators, however, would face considerably higher costs with approximately \$187 million annually.

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