

From: "Sunda, John B." <JOHN.B.SUNDA@saic.com>
To: <imasar@imasar.com>
Sent: August 6, 2002 3:41 PM
Subject: Attention: Mofteh - Questions Regarding Estimating Costs for Purchase and Installation of InvisiHead Technology on Offshore Cooling Water Intakes

I am an engineer working for SAIC and am working on a contract with the US EPA to provide technical support in the development of the 316b Rule. Section 316 b of the Clean Water Act requires facilities that withdraw water from Waters of the United States for cooling purposes to use the Best Technology Available (BTA) to mitigate impacts on aquatic organisms through reduction in impingement and entrainment. The installation of velocity caps on submerged offshore intakes is considered as a candidate BTA technology under certain circumstances. Based on the information provided in your website, I believe the InvisiHead technology represents an example of a high performance velocity cap technology.

My responsibility is to develop a methodology for estimating the compliance costs for installing (retrofitting) various candidate BTA technologies. The BTA technology being considered in this case is the use of velocity caps on existing submerged offshore intakes and on existing intakes relocated to a submerged offshore location. The cost estimates are ball park type rough estimates intended to reflect the average or "typical" costs for various types of situations. The basis for most of my estimates are the intake design capacities of existing facilities plus some basic information such as water depth and type of water body in this instance. I am contacting you to inquire about the "InvisiHead" technology described on your website. In particular I would like to obtain "typical" or "average" delivered costs (in the US) for the InvisiHead equipment that are designed for individual intake flows ranging from 5,000 gpm to 350,000 gpm. I would prefer estimates for several values spanning this range since my usual method is to develop total cost estimates for multiple flow values (and possibly multiple scenarios), plot them and fit a curve to be used in developing specific individual facility cost estimates. As I expect a significant portion of the costs should be for installation which will require the use of divers or a temporary structure such as a coffer dam. If you provide installation, I would be interested in your experience with costs, if not then please

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provide me with contacts of contractors that perform this service in the US. Also provide me with any information that might affect installation costs such as equipment weight. Below is a summary of my information request concerning costs of the "InvisiHead" Technology. Note that EPA can not specifically endorse a product. However, should you provide cost data, your company name will be listed as a source of information in the rule development documentation which may improve your companies visibility.

Data Being Sought Concerning the Costs of InvisiHead Velocity Cap Intake Technology.

* Please provide typical purchase costs (delivered) of InvisiHead Technology for the following design intake flow values:

- 5,000 gpm
- 10,000 gpm
- 25,000 gpm
- 50,000 gpm
- 100,000 gpm
- 200,000 gpm
- 350,000 gpm

Note you may use your own flow values if it is more convenient.

* Do you use different materials of construction for different water environments (e.g., freshwater versus saltwater or freshwater with Zebra Mussels)? If so, what are the cost differences. You can give separate cost values or provide a general cost factor.

* Do you have any knowledge concerning installation costs for the different sizes of equipment? I understand that such costs are very site specific and that existing system retrofits may require cutting, welding and/or bolting an attachment flange prior to installation by divers. Please provide any cost information you may have concerning:

- Examples of relevant projects you have performed, what was involved and associated cost or contacts.
- Mobilization/demobilization of crane & barge (small & large)
- Mobilization/demobilization of dive team
- Time to install one cap each size above (as retrofit)
- Size of dive team needed for small & large caps

-Other cost components particularly for retrofit installations
-or provide total installation costs or ranges of costs with a
description of how various factors affect the costs.

* What type of routine maintenance (e.g., inspection by divers) is
recommended, if any?

Please send me a return message confirming delivery of this message. If
you would like to discuss this request please call me at 703-318-4607. I
will call in two days (Thursday) if I do not hear from you. I am generally
in the office between 10:30 AM to 7:00 PM Eastern Time.

Thank You in Advance for Your Consideration.

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