



Hydro Power Contest

FREQUENTLY ASKED QUESTIONS

Can you describe the Contest?

Individuals and teams work to prepare a device that converts the potential energy of an elevated, fixed quantity of water into mechanical energy, using a turbine of some sort. There are three divisions of competition: one for students, one for any contestant, and one for prior winners. Within a division there are two classes of competition: power and efficiency. Competitors are given a fixed amount of time (say, 15 minutes) at a national competition to demonstrate the performance of their device.

What do the results mean?

Results are posted with two components to each score: time and total flow. Time is the indication of how long it took, usually in seconds, to lift a weight through a given distance. The rules state which weight must be lifted for each competition class. Total flow is the amount of water used during the time of lifting the weight. Time is the indication of power produced; smaller time means greater power. Total flow is the indication of energy conversion efficiency; smaller total flow means greater efficiency. In the power classes of competition, the fastest time wins, with lowest total flow used as a tie-breaker. In the efficiency classes, the lowest total flow wins, with time used as a tie-breaker.

What's the purpose of the Contest?

The contest originated with two purposes:

- ▶ To give college students a practical engineering project while still in college
- ▶ To introduce students to the hydropower industry

Can pre-college students compete?

Yes, pre-college students can compete. In fact, a number of pre-college students have competed in the past and some have won. Several teamed up with hydro professionals or college students to prepare their entries.

Is this contest a good place to start?

This is a great way to get started with engineering design competitions. Entries are not judged on the basis of their engineering or technical design quality, but by their performance. Two classes of competition require that entries incorporate a supplied turbine kit. These classes require a less rigorous grasp of energy conversion principles than the classes that permit the contestants to design their own turbine. But there is room to grow, as well.

Can I get outside help?

Friends, prior contestants, and faculty often contribute ideas and suggestions to any entry. Outside help is encouraged since the point of the competition is to gain practical experience as a complement to theoretical education. However, each contestant needs to determine if the contribution from outside help really warrants competing as a team rather than as an individual.

When does the competition take place?

The national competition takes place at an annual hydropower industry conference, usually in the summer. Competition starts on the evening prior to full conference activity and is active throughout the conference schedule, for another two and a half days.

Do I have to attend the conference to compete?

No, but you probably should if you are able. Contestants who attend the national competition find that it completes the practical education process. All contestants who attend consider it a valuable experience to see how other contestants solved the same engineering problem in a different way. For those who cannot attend, contest entries may be shipped to the conference site for competition.

How do I send my entry?

Each year a new set of shipping instructions is prepared and made available to those who declare their intent to compete. A printed set of instructions is available, usually one month prior to the competition. A set of instructions are also posted on the Contest web site.

How do others come up with the funds to travel?

A number of students have persuaded their departments or colleges to partially fund their travel to the competition if the Contest is part of a student course or project. Many have contacted local or regional hydropower industry corporations and solicited travel sponsorships. Try contacting any hydroelectric power companies in your area or companies which produce products or services for hydroelectric power station owners.

How many teams are allowed from one school?

There is no limit to the number of entries from one school, though the rules limit the number of entries from one individual or team. Since there are several classes of competition, there is usually room in the competition for a variety of entries from a school.

How much time does it take to prepare for competition?

That's a tough question to answer. It varies so much for every competitor. Though hydro power concepts are not difficult to grasp or master, this is still not a trivial problem to solve. It is an open-ended engineering problem with no one "right" solution. This means that you probably can get within range of a competitive design quite quickly, but that you can also refine your entry in a great number of ways.

What are the deadlines?

Generally, the only true deadline is that a *Declaration of Intent to Compete* must be returned to the Contest organizers one month prior to the competition. There is no deadline for ordering a Turbine Kit, though you should give yourself time to prepare a competitive device.

Can I buy a kit and not enter the contest?

Yes, most people who purchase Turbine Kits use them in school courses or projects. Many do not compete in the national Contest. It is not a requirement that you enter the Contest in order to use the Turbine Kit.

Where do I get more information?

The Contest Rules, Results, Schedule, Location, Costs, and much more can be found on the Hydro Power Contest web site at:

<http://users.rcn.com/hands-on/hydro/contest.html>

Start there and link to the related pages to find out lots of information about the Contest.

For more information contact:

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