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SPOTLIGHT:

VAALER AWARDS

SPECIAL REPORT:
MIDWEST CHEM SHOW

THE 1984 CHEMICAL PROCESSING VAALER AWARD WINNERS

Eleventh biennial competition highlights outstanding achievements

JOSEPH POWERS, Vaaler Awards Editor

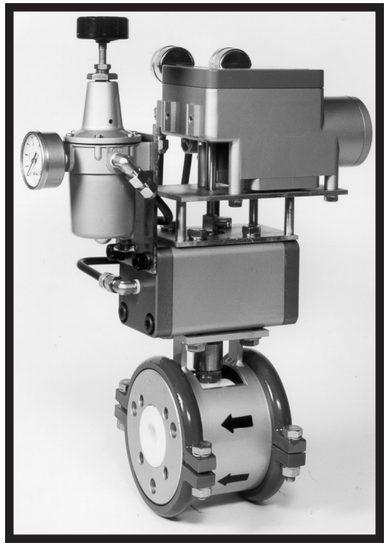
CHEMICAL PROCESSING is highly pleased to present the 1984 Vaaler Award winners in this issue. Top developments that have received the highest number of points are described, and reasons are provided in most cases why the judges have decided the winners are worthy of merit. Quotes from judges have been inserted in the articles wherever they were appropriate to highlight the significance of the developments.

The CHEMICAL PROCESSING Vaaler Award program owes most of its success to the diligent, conscientious efforts of the judges who have applied their wide experience and firsthand knowledge of products to the scoring of points for the developments. Vaaler judges from throughout the chemical processing industries have been asked to serve. Each judge has been assigned the category for which he is best qualified, a determination that was based upon former performance in the award program, recommendations from authorities in the CPI and sometimes upon service as a speaker at one of the Table-Top seminars sponsored by CHEMICAL PROCESSING.

The 17 chief judges, assisted by 22 others determined how well the entries met the criteria of (1) significance in the overall chemical processing operation; (2) novelty or uniqueness; and (3) the breadth of application. To help judges make their selections, some enterprising entrants have included working demonstrations with their entries. For the first time, a videocassette accompanied one development to enable judges to simplify their choice of winner in a particular category.

Among the categories, instrumentation again led the way in the totals. No less than 10 categories were assigned to various aspects of instrumentation. Perhaps this may serve as a barometer of future trends in the CPI, which portend greater use of automation in chemical processing operations and a swing toward robotics (this subject will be covered in depth in an upcoming issue). Additionally, in line with the trend to the automated chemical processing plant is the need for increased measuring accuracy. For the first time in many years, a separate category for calibrators had to be created to accommodate the many instruments designed to perform this function.

The Vaaler Awards have been presented since 1964. Some of our readers may not be aware that the award program has been named in memory of John C. Vaaler (1899-1963), who served as Editor of CHEMICAL PROCESSING from 1946 to 1961 and as Chairman of the Editorial Board from 1961 to 1963. The biennial program is conducted essentially in the same way as it was when it was first initiated 18 years ago. Since the Vaaler Award program is an entry competition, only developments that were formally submitted were considered in the final judging process.



The Fujikin Fine Ceramic Rotary Control Valve with Actuator and Positioner

CHEMICAL PROCESSING's long-standing problem-solver concept provides the impetus for a competition of this kind. New developments that promise improvements in processing operations have been described in the magazine since the first publication in 1938. Furthermore, CHEMICAL PROCESSING shows in its case-history articles exactly how such developments perform in actual chemical processing applications.

More than 11,000 entry blanks were distributed to the industry, during a period that extended over several months. An attempt was made to reach every possible entrant, not only by mail but also by personal contact at meetings and at various trade shows.

Entrants receiving the highest number of points from the judges in a specific category were designated *Top Honors* winners. Those receiving slightly fewer points - but still considered to be significant developments - were given *Honors*. In many cases, the judges have described some entries as being outstanding developments but have failed to give them the qualifying number of points to be named winners. Because the chief judges were working with others in the selection process, an honest difference of opinion in respect to some entries was unavoidable but has ensured a fair competition.

It should be recognized that in some categories only a *Top Honors* has been awarded. This does not imply that only one entry was received for the category. It does mean, however, that the judges felt that the award-winning development was so outstanding that the others could only receive far fewer points.

CHEMICAL PROCESSING's intention in conducting the Vaaler Award program is to single out the major developments that can lead to more efficient and effective operation of plants in the chemical processing industries. Whether or not this goal has been achieved will be evident in ensuing years.

Fine ceramic valve designed for corrosive/abrasive uses

Top Honors

Fine ceramic control valve that can be used in corrosive, abrasive, and erosive services is the recipient of a *Top Honors* in the 1984 CHEMICAL PROCESSING Vaaler Awards. The valve can be used for both throttling and on/off applications.

The award-winning development is designed to control chemical and abrasive slurries, TiO_2, ferric chloride, $CaCO_3$, $Mg(OH)_2$, $CaSO_4$, Kaolin and lime slurries, and low-concentration acids in the chemical and pulp and paper industries.

The fine ceramic control valve product line is reported to be the result of a continuing research and development program by its manufacturer in the areas of ceramic materials and other applications to control valve technology. The ceramic valves have been in service with outstanding results in the most severe services and applications, the developer states. Due to the high cost of maintaining and replacing control valves, the ceramic product line is said to have become cost-effective for a wide range of applications.

Seeking a material that would resist corrosion and have outstanding wear resistance, the company has been working with ceramic materials for more than 10 years. Alumina ceramic was selected for the critical valve parts because it has hardness next to diamond and is said to be superior to other materials in wear resistance. Alumina ceramics are inert to oxidation, are not corroded by chemical agents, and are not subject to radiation damage, the manufacturer states.

The critical parts of the control valve are solid ceramic contained by a metal housing for maximum strength and protection. The metal clamping effect of the housing reportedly makes full use of the extremely high compressive strength of the fine ceramic material by holding the individual ceramic components together as a single ceramic body. This is said also to eliminate the difficult problem of varying thermal expansion rates when metal and ceramics are mixed in critical parts.

In addition to those uses subject to corrosion, abrasion, and erosion, the ceramic unit can be considered for those applications in which valves require frequent maintenance and trim replacement. Since ceramic is 100 times more corrosion-resistant than steel, it can be suited for a wide range of applications within its temperature and pressure design limits.

Valve is available in ½, ¾, 1, 1½, 2, 2½, 3, 4, 6 and 8" sizes. It can withstand 150 psig maximum pressure, and 400°F temperature in standard materials. The shaft is offered in stainless steel, Hastelloy® alloy, Alloy 20, titanium, or ceramic.