Additional Participants
Since the initial fifty participating water utilities were announced in the first issue of this bulletin we have been happy to welcome to the ranks of participants twenty-four more California water utilities. The recent additions are:
- City of Buena Park
- Fallbrook Public Water Dist.
- Helix Irrigation Dist.
- Pomona Valley Municipal Water Dist.
- City of San Jacinto
- Somerset Mutual Water Co.
- Carpinteria County Water Dist.
- Coachella Water Dist.
- Desert Hot Springs County Water Dist.
- Eastern Municipal Water Dist.
- City of Alhambra
- Rossmoor Water Co.
- Costa Mesa County Water Dist.
- City of Santa Barbara
- Southwest Water Co.
- County of Kern
- City of Newport Beach
- San Dieguito Irrigation Dist.
- South Coast County Water Dist.
- San Bernardino Valley Municipal Water Dist.
- City of Santa Ana
- City of Milpitas
- Victorville County Water Dist.
- East San Bernardino County Water Dist.

Manufacturers Participation
In the first issue of this bulletin mention was made of the participation in the re-establishment of the Laboratory of a number of manufacturers of water utility equipment. Since that time we have been greatful to acknowledge additional gifts of both cash and equipment which have provided us with a portion of the facility. It is a pleasure to list here those companies who have been so gracious.
- Ford Meter Box Co.
- BEECO, Division of Hersey-Sparling Meter Co.
- Febco, Inc.
- Darling Valve & Manufacturing Co.
- Southern Pipe & Casing Co.
- Brooks Products, Inc.
- Johns-Manville Co.
- Grinnell Company of the Pacific
- Cla-Val Co.
- Badger Meter Co.
- Los Angeles Department of Water & Power
- Scott, Smith, Div. of United Concrete Pipe Co.
- Rich Valve Co.
- Palos Verdes Peninsula Water Co.
- Byron-Jackson Co., Div. of Borg-Warner Corp.
- Worthington Corp.

The Slow Down
By this time it is had been expected that a completion date for the new Laboratory would have been established and an open house date set. However, an unexpected delay in the form of a seven week period of "status quo" developed while the plans for the revision of the Laboratory building fought their way through the Dept. of Building & Safety plan check division in order to be granted the necessary building permit. This delay has, of course, thrown all time schedules completely to the wind. However, we are assured that early in September the required building permit will be issued and then the work on the rehabilitation of the building will be underway at top speed. Having experienced this delay we are now quite hesitant to even guess at a possible opening date. But, we wish to assure you that every effort has and is being exerted to accomplish the opening of the Laboratory at the earliest possible date.

Working drawings have been prepared for the installation of all control piping beneath a new floor slab. A centralized control panel will be provided with the potential of remotely controlling all of the valves and pumps that normally will be used in the performance of evaluation work in the Laboratory. Valves used for switching circuits and special calibration tests will be manually controlled. In addition provision is being made for the possibility of future installation of continuous recording equipment for pressure drop and flow rate data. In this way we feel that we will not be likely to dig up the floor shortly after the inauguration of the Laboratory. To some the use of continuous recording equipment may seem to be somewhat unnecessary. But, after years of trying to record data from several locations by both verbal and optical means we strongly feel that a study of continuous recordings will be able to give us an insight into equipment performance that has not been available previously.
Research Notes

F. M. Patterson, who received the degree of Engineer in Mechanical Engineering in June 1967 from USC, has just completed a thorough and very interesting investigation into the formation of air entraining vortices in a cylindrical tank with the outlet centered in the bottom. The level of critical submergence both with and without a vortex breaker—has been established for a 1½ inch pipe under flow velocities that are normally found in process pipe lines. The particular application of this investigation is under conditions where the in-flow to the tank may fluctuate a small amount and the outflow is essentially constant; but, where it is imperative that vapor not be entrained into the pipeline. The results of this investigation will be the foundation upon which further work may be done to establish acceptable limits for some of the other parameters of vortex control in tanks used on process pipelines.

Donald C. Glover, candidate for the Master of Science in Mechanical Engineering degree from USC, is developing a test stand for the evaluation of head loss in 1" PVC pipe. In addition to a liberal distribution of pressure taps there will be an orifice meter and a set of weigh tanks by which the flow rate may be calibrated.