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The International Water Conference Thirty-first Annual Meeting

OCTOBER 27, 28, 29 -- 1970 WILLIAM PENN HOTEL PITTSBURGH, PENNSYLVANIA 15230

C. L. FITZGERALD, Jr. General Chairman

W. M. PORTER
Secretary

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WILLIAM PENN HOTEL
PITTSBURGH, PENNSYLVANIA 15230

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J. K. RICE General Chairman

W. M. PORTER
Secretary

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OCTOBER 24, 25, 26 -- 1972 WILLIAM PENN HOTEL PITTSBURGH, PENNSYLVANIA 15230

PAUL COHEN
General Chairman

W. M. PORTER
Secretary

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### The International Water Conference Thirty-fourth Annual Meeting

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OCT. 30, 31, -- NOV. 1, 1973
WILLIAM PENN HOTEL
PITTSBURGH, PENNSYLVANIA 15230

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W. H. WEITZEL

General Chairman

W. M. PORTER
Secretary

Papers presented, Tuesday, October 30, 1973

#### MORNING SESSION

Walter Zabban, Session Chairman, The Chester Engineers, Coraopolis, Pa.

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### THE INTERNATIONAL WATER CONFERENCE

35th ANNUAL MEETING

Oct. 29, 30, 31 1974

### WILLIAM PENN HOTEL PITTSBURGH, PENNSYLVANIA 15219

R.G. KNIGHT

General Chairman

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Secretary

RICHARD LAMPL

Assistant Secretary

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### THE INTERNATIONAL WATER CONFERENCE

36th ANNUAL MEETING

NOV. 4, 5, 6, 1975

### WILLIAM PENN HOTEL PITTSBURGH, PENNSYLVANIA 15219

R.N.BAUM

General Chairman

RICHARD LAMPL

Secretary

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### THE INTERNATIONAL WATER CONFERENCE

37th ANNUAL MEETING

OCT. 26, 27, 28, 1976

### WILLIAM PENN HOTEL PITTSBURGH, PENNSYLVANIA 15219

WALTER ZABBAN

General Chairman

RICHARD LAMPL

Secretary

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### THE INTERNATIONAL WATER CONFERENCE

38th ANNUAL MEETING

NOVEMBER 1, 2, 3, 1977

### WILLIAM PENN HOTEL PITTSBURGH, PENNSYLVANIA 15219

**PAUL GOLDSTEIN** 

General Chairman

RICHARD LAMPL

Secretary

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Papers presented, Tuesday, November 1, 1977

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The Conference on Industrial Water



Engineers' Society of Western Pennsylvania

### THE INTERNATIONAL WATER CONFERENCE

39th ANNUAL MEETING

**OCTOBER 31, NOVEMBER 1, 2, 1978** 

### WILLIAM PENN HOTEL PITTSBURGH, PENNSYLVANIA 15219

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Papers presented, Tuesday, October 31, 1978

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| J. W. Carroll, San Diego Gas and Electric Co., San Diego, Calif.; and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| L. R. LePage and B. A. Milnes, Stone and Webster Engineering Corp., Boston, Mass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| Carlton Grimm, Montana Power Co., Butte, Montana; and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| James Rios, Bechtel Power Corp., San Francisco, Calif                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Stearns-Roger, Inc., Denver, Colorado                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Charles A. Bishop, Session Chairman, U.S. Steel Corp., Pittsburgh, Pa. Andrew F. McClure, Jr., Session Discussion Leader, Betz · Converse · Murdoch · Inc., Pittsburgh, Pa.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Andrew F. McClure, Jr., Session Discussion Leader, Betz Converse Muldoch Inc., Philodologi, Fa.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| G. T. Farley and F. G. Vogt, Betz Laboratories, Inc., Trevose, Pa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| George M. Thorpe, Hercules Inc., Wilmington, Delaware                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| D. J. Miller, Commonwealth Edison Co., Chicago, Ill.; and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| C. H. Neff and R. W. Lane, Illinois State Water Survey, Urbana, Ill                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| John W. Moffett, Kentucky Utility Co., Ghent, Kentucky; and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| J. E. Zoski, Betz Laboratories, Inc., Tevose, Pa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| Chester S. Parks, Ecodyne/Graver Water Division, Union, N.J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| H. A. Schlesinger, Gibbs and Hill, New York, New York; P. D. Burgess,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Stone and Webster, Boston, Massachusetts; J. H. Duff,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Burns and Roe, Paramus, New Jersey; R. E. Gentner, Los Angeles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Dept. of Water and Power, Los Angeles, Calif.; and N. C. Mohn, Combustion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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The Conference on Industrial Water



Engineers' Society of Western Pennsylvania

### THE INTERNATIONAL WATER CONFERENCE

40th ANNUAL MEETING

OCTOBER 30, 31, NOVEMBER 1, 1979

### **WILLIAM PENN HOTEL** PITTSBURGH, PENNSYLVANIA 15219

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