WATER USE INFORMATION SYSTEM

The Hanford Engineering Development Laboratory, under sponsorship of the U.S. Department of Energy, has developed a Water Use Information System (WUIS) to help you plan energy strategy.

WUIS provides data for each Water Resource Cataloging Unit division in the contiguous United States. Data are available on cooling water requirements for all central station electric power plants.

WUIS provides data for power system planners to make initial assessments of the availability of water for cooling electrical power generating facilities.

WUIS data are available for each of the eight-digit Water Resource Cataloging Unit Code, as shown in the illustration below. Data on water resources are tabulated for each Cataloging Unit. Data on electrical power plants are tabulated by state and county, as well as by Cataloging Unit.

The water resource element of the information system contains four basic types of data: area description; surface water; ground water; and oceans or bays falling within the Cataloging Unit. Table I summarizes the water resource data included for each Cataloging Unit.

Table II summarizes the data available on electrical generating plants. These data are provided for thermal power plants of 100 MWe rating or greater; for convenience, applicable data for hydroelectric plants are also given.

HEDL is also developing an auxiliary computerized model, which, used in conjunction with the information system, will provide projections of future water use data. These predictive features are available in preliminary form; full capability will be available by late 1979.

Fees for retrieval of data are on a cost-recovery basis according to established Department of Energy policies.

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TABLE I
DATA PROVIDED FOR EACH 8-DIGIT WATER RESOURCE CATALOGING UNIT

AREA DESCRIPTION INCLUDES
• APPROXIMATE AREA (SQ MI)
• STATE AND DOMINANT COUNTY
• APPROXIMATE AREA POPULATION
• AVERAGE, MIN AND MAX RUNOFF
• WATER RIGHTS STATUS AND COMPETING WATER USE DATA WILL BE AVAILABLE 1980

SURFACE WATER
• RIVERS (4 MAX/CATALOGING UNIT)
  • NAME
  • AVERAGE ANNUAL FLOW (cfs)
  • FLOW BY MONTH FOR 50, 90 AND 95% PROBABILITY
  • TOTAL DISSOLVED SOLIDS, HARDNESS
• TEMPERATURE (MEAN, MAX, MIN)
• LAKES OR RESERVOIRS (4 MAX/CATALOGING UNIT)
  • NAME
  • AREA
  • VOLUME

GROUND WATER (MAX OF 4 AQUIFERS/SUB-SUB REGION)
• AQUIFER CODE
• AQUIFER ROCK TYPE & DESCRIPTION
• GROUND WATER REGION
• DEVELOPMENT STATE (RECHARGE - OVERDRAFT)
• DEPTH BELOW GROUND LEVEL, MAX, MIN
• AQUIFER THICKNESS, MAX, MIN
• SPECIFIC CAPACITY, MAX, MIN (GAL/FT/HR)
• AREAL EXTENT (SQ MI)
• YIELD, MAX, MIN (gpm)
• TEMPERATURE, MAX, MIN
• TOTAL DISSOLVED SOLIDS, MIN, MAX (ppm)
• WATER RIGHTS (NARRATIVE)

OCEAN/BAY (I/CATALOGING UNIT)
• NAME
• SALINITY
• MEAN, MAX AND MIN TEMPERATURE

TABLE II
GENERATING PLANT DATA
DATA ARE PROVIDED FOR EACH THERMAL GENERATING PLANT WITH RATINGS OF 100 MWe OR GREATER. APPLICABLE DATA FOR HYDROELECTRIC UNITS ARE INCLUDED FOR CONVENIENCE.

GENERAL PLANT INFORMATION
• PLANT NAME
• UTILITY NAME
• PLANT LOCATION, INCLUDING CITY, COUNTY AND STATE
• WATER RESOURCE CATALOGING UNIT
• LATITUDE AND LONGITUDE
• FPC POWER SUPPLY AREA & REGION
• PLANT TYPE
• PLANT CAPACITY (MWe)
• FIRST YEAR OF COMMERCIAL OPERATION

PLANT COOLING INFORMATION
• TYPE (ONCE-THROUGH, TOWER, ETC.)
• COOLING WATER SOURCE
• FLOW RATE OF RECEIVING WATER BODY
• WITHDRAWAL, CONSUMPTION, BLOWDOWN, DISCHARGE RATES

PLANT OPERATION DATA (YEARLY)
• GENERATION
• HEAT RATE
• CAPACITY FACTOR

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