

ORGANIZATION OF INSTRUMENTATION

WITHIN THE

U.S. GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

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"ABSTRACT"

The Water Resources Division of the U.S. Geological Survey has recently consolidated its instrumentation support activities. The Hydrological Instrumentation Facility is located at NSTL Station, MS near New Orleans. This Facility has nationwide responsibility for research, development, procurement, warehousing, distribution, repair and calibration of unique instrumentation in support of the Division's hydrologic data collection, interpreted studies and research.

HYDROLOGIC INSTRUMENTATION FACILITY

The U. S. Geological Survey was established in 1879 to serve as the Federal Government's first natural resources agency. Its responsibilities include classifying and quantifying the nation's natural resources (geologic structure, mineral, energy, and water resources) and geological and topographic mapping.

The Water Resources Division (WRD) assesses the quality and quantity of the nation's water supply and develops the necessary scientific knowledge for the sound management of these resources. The WRD has no management or regulatory authority and is strictly a scientific organization. WRD is a field oriented organization with approximately 90 percent of its staff operating from District Offices located in nearly every state. The vast amount of water data being collected requires a large amount of specialized instrumentation. Throughout the years, hydrologic equipment developed by WRD has become the standard of the world. During recent years the needs for instrument development and supply were not being met. Late in 1977 WRD senior staff reached a decision to reorganize several fragmented groups supporting instrumentation into a single organizational unit. This unit, later named the Hydrologic Instrumentation Facility, became operational in March 1980. Program authority is under the guidance of the Instrumentation Coordinator, a staff position of the Assistant Chief Hydrologist for Operations. An Instrumentation Committee composed of field managers and technical specialists was created to provide long term planning and oversight to the program.

The Hydrologic Instrumentation Facility (HIF) is located at the U.S. Geological Survey's Gulf Coast Hydrosience Center at NSTL Station, Mississippi. The HIF has nationwide responsibility for all aspects of instrumentation, in support of WRD programs.

The Chief of the Hydrologic Instrumentation Facility is not only responsible for total management of the Facility, but also maintains liaison with other Federal agencies,

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commercial equipment manufacturers, and the operational managers within the U.S. Geological Survey.

The HIF is comprised of four operating Sections, an Administrative Unit and a Technical Services Unit as follows:

INSTRUMENT DEVELOPMENT LABORATORY

This laboratory is the principal research and development resource of the Water Resource Division in the area of instrumentation. It is responsible for three broad categories of assignment: (1) Updating and modifying existing instrumentation to take advantage of improved materials or technology; (2) Continued development of instrumentation compatible with equipment owned by the WRD at the existing level of technology; and (3) Research and design of totally new instruments that will lead the "state-of-the-art" for instrumentation packages of the future.

Research and development is conducted both in-house and by contract with public and quasi-public research groups and private enterprise. Personnel have responsibility for developing criteria, statements of work, and monitoring contracts for outside research. This section presently has staff members with field experience in surface water, water quality, ground water and hydrometeorological data needs, as well as a technical staff of electronic, electrical and mechanical engineers and technicians. The Water Resources Division has made a major financial commitment to the upgrading of instrumentation in the next few years. The responsibility for this activity lies within the Instrument Development Laboratory.

FIELD SERVICE AND SUPPLY SECTION

This section operates the warehouse, initiates procurement actions to purchase equipment, and fills field orders. It also provides shipping and receiving services for all sections at the HIF. The handling of field orders is greatly expedited by the implementation of the Computerized Support System (HIF/CSS). This system will benefit field users who can scan the computerized catalog and place orders directly from their terminal. The HIF/CSS system will also generate historical information to guide future purchase and stocking patterns, to decrease the number of out-of-stock items.

This section maintains close liaison with field offices on equipment needs and adds or deletes items to the inventory in response to field needs.

REPAIR AND CALIBRATION SECTION

This section repairs and calibrates all types of field equipment and operates the machine shop and builds prototypes for the Instrument Development Laboratory. Capability presently exists to repair any Water Resources Division equipment.

Repairs to district- or project office-owned equipment are billed on a straight time and materials basis.

This section also fabricates and modifies some unique and specialized pieces of equipment which are sold through the Field Service and Supply Section.

Routine stock items requiring control testing or pre-calibration are also processed here before being stocked in the warehouse.

In general, this section is responsible for providing service, parts, and technical repair procedure and consultation to the Water Resources Division field program.

TEST AND EVALUATION SECTION

This section establishes minimum performance standards for instrumentation to insure that Water Resources Division data collection requirements are met and that legal and scientific credibility continues. The section writes acceptance standards, develops quality control procedures and test methods that will be written into future procurement actions. The section is working closely with the Branch of Contracts and other agencies so that our evaluation criterion are in compliance with all applicable legal requirements. The section will design and conduct engineering testing and analysis of both WRD developed and commercial hydrologic instrumentation. A "qualified products" list will eventually be developed as a guide to the procurement of commercial products meeting our requirements.

We are still acquiring testing equipment, establishing test procedures, and determining minimum acceptable standards. It is anticipated that we will not have recommendations on all available instrumentation for some time. However, we encourage field offices to check with the Test and Evaluation Section if procurement of unfamiliar instrumentation is being considered. We may have informal recommendations, or can pass on experience from other sources. Field offices should be encouraged to pass on information that they may have obtained by experience with new commercial instrumentation.

ADMINISTRATIVE SERVICES UNIT

The Administrative Services Unit is responsible for the Facility's budget, accounting, personnel, procurement and office management, necessary to support the operating needs of the other sections. This unit assists the Chief of the Facility in preparing an operating budget, in cooperation with the operating Sections. It is responsible for budget projections and real time cost accounting of the operating budget; maintains liaison with the Branch of Financial Management and the administrative offices of District and Project Offices to resolve accounting problems.

This unit also provides procurement services for items less than \$5,000.00 and maintains supply source and procedure information. This unit, along with the Technical Services Unit, maintains an automated microfilm system of sources of supply and technical standards for most electronic and mechanical components required by the Hydrologic Instrumentation Facility.

TECHNICAL SERVICES UNIT

The Technical Services Unit provides in-house support in preparing technical documentation for all Water Resources Division equipment. It is developing standards for preparation of plans and specifications and a system for upgrading these, as needed. A file of industry standards for common components is being developed to assist design engineers in standardizing WRD equipment to the greatest extent possible.

This unit provides copies of specifications, engineering drawings, and electronic art work to contractors, and assists in monitoring contracts for procurement of equipment.

The Technical Services Unit is also responsible for operating a management computer terminal. The present support consists of the Computerized Support System (HIF/CSS), which directly supports the Field Service and Supply Section. The HIF/CSS improves cost accounting and controlled property transactions to the HIF, ordering field offices, and Administrative Division personnel, as well as handling computerized billing for work done for field offices by the Repair and Calibration Section.