

**PROPOSAL FOR COOPERATIVE AIR QUALITY MONITORING
BETWEEN THE UNIVERSITY OF IDAHO
AND THE IDAHO NUCLEAR ENGINEERING LABORATORY
AT THE TAYLOR RANCH, WILDERNESS RESEARCH CENTER**

Response to EG&G RFP for Task Order No. 17 to Subcontract No. C85-110544 for University of Idaho for Meteorological Equipment and Installation - AR-08-88.

7 March, 1988

Rationale

The University of Idaho Wilderness Research Center (WRC) operates the Taylor Ranch Field Station as a focal point for interdisciplinary wilderness-related research by the University and cooperating institutions. This proposed work will initiate a cooperative effort between the Wilderness Research Center and the Idaho National Engineering Laboratory (INEL) to conduct research to develop a background monitoring site as part of an integrated global environmental monitoring network.

The 65-acre Taylor Ranch field station, located on the Big Creek Drainage in the heart of the 2.3 million acre Frank Church River-of-No-Return Wilderness in central Idaho, is ideally suited for the location of such research. It is staffed year-round; has basic laboratory facilities, residence cabins, pack stock and an airstrip; four pristine mountain streams crossing the property; and it is the focal point for an on-going environmental research program. Because Taylor Ranch is located in the center of the largest contiguous acreage of designated Wilderness in the lower 48 states, it could serve as an excellent background site for a regional atmospheric monitoring program in the central and northern Rockies.

Environmental monitoring is becoming a major field of applied science with rapidly developing methodologies, instrumentation, and accumulating data bases. Internationally, environmental monitoring will become increasingly important with the industrialization of less developed nations. The INEL has taken a leadership role in developing the concept and methodology for an integrated global background monitoring network. A logical step is the inception of a monitoring network site at the Taylor Ranch as part of the network now operated by the INEL.

Research Plan

We are proposing installation and operation of a remote, automated, multi-parameter meteorological station instrumentation package at the Taylor Ranch.

We propose using the CR-10 Weather Station (Campbell Scientific, Logan, UT) to measure and data-store wind speed and velocity, air and soil temperature, incident radiation, humidity, barometric pressure, and rainfall. This unit is solar-powered and free-standing, thereby suitable for unattended monitoring. It is complete with data logger and data storage modules so that

UI personnel could simply exchange the tapes or other storage media with INEL for data retrieval on their existing data storage system.

In this cooperative program, the Taylor Ranch personnel will perform routine collection of samples and service on the instrument package. Data tapes will be sent to the INEL for analysis and incorporation into their network. Detailed service of electronic components would be performed by INEL personnel. The following budget is for first year startup costs...subsequent year budgets would approximate annually \$3,500 for this work.

PROJECT BUDGET - TASK ORDER NO. 17

Salaries

Taylor Ranch personnel (on-site monitoring)
Staff Benefits (25%)

~~\$ 1,320~~
~~330~~

Operating Expenses

~~Data shipment~~

~~400~~

Travel

~~Idaho Falls for training~~

~~550~~

Capital Outlay

Meteorological station (with installation & calibr.)

³⁸
~~8,800~~

Contracts

~~0~~

University of Idaho Overhead

~~.277 x \$2,600~~

~~720~~

Contract Total =

~~\$12,120~~

¹⁵
8,838