

## MONTHLY PROGRESS REPORT

December, 1999

Project Title: Low-Cost, High Performance Materials using Illinois Coal Combustion By-Products

ICCI Project Number: 99-1/2.1B-4

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### WORK PLANNED FOR THIS MONTH

- Contact cooperating companies regarding contract award
- Select source(s) of clean coal ash
- Schedule delivery of coal ash and other supplies to UWM-CBU
- Receive materials at UWM-CBU
- Begin physical characterization of Illinois coal ash
- Begin chemical characterization of Illinois coal ash

### WORK PERFORMED THIS MONTH

- Received revision of the ICCI contract from ICCI contract manager (per comments from UWM Graduate School). Contract executed and returned to ICCI.
- Contacted the cooperating companies regarding contract award
  - Bradley University, Dr. Adeb Rahman, Peoria, IL
  - Chicago Brick & Block Co., Chicago, IL
  - Crumb-Colton Block Company, Rockford, IL
  - Illinois Power Company, Decatur, IL
  - United Ready-Mix, Inc., Peopria, IL
  - Williams Ethanol Services - Ethanol, Pekin, IL
- Contacted the following additional Illinois coal users for potential participation in this project:
  - SIU, Carbondale, IL
  - BF Goodrich, Henry, IL

- Illinova Corporation, Vermilion Power Station, Oakwood, IL

#### **WORK PERFORMED THIS MONTH (Continued)**

- Received the following materials at UWM-CBU
  - Received fine and coarse aggregates, and cement samples from United Ready-Mix, Peoria, IL
  - Received ash sample from SIU (clean coal ash)
  
- Started physical characterization of Illinois coal ash samples
  - Fineness (Material retained on No. 325 sieve)
  - Density
  
- Started chemical characterization of Illinois coal ash samples
  - Mineralogy
  - Oxides
  - Elements
  
- Start physical characterization of aggregate and cement samples from United Ready-Mix, Peoria, IL
  - Gradation
  - Absorption and specific gravity
  
- Established tentative production schedule for concrete and dry-cast concrete products
  - February, 2000 - Dry-cast concrete products - Crumb-Colton Block Company, Rockford, IL
  - April, 2000 - Concrete products (non-air entrained concrete, air entrained concrete, and superplasticized concrete), United Ready-Mix, Inc., Peoria, IL

#### **Accomplishments and Comments on Current Work**

- The ICCI contract was approved December 10, 1999 and work was started immediately. The most important item to be determined is the source of clean coal ash to be used for the project. UWM-CBU is working with the ICCI Contract Manager to select one or more ash sources. Two samples have been received by UWM-CBU and are currently being tested. The aggregate and cement to be used for concrete manufacturing in Peoria, IL were delivered to UWM. They are also being tested for their properties. All project participants have been informed of the start of the project and tentative production dates for the concrete and cast-concrete products have been selected.

## **WORK PLANNED FOR NEXT MONTH**

- Finalize selection of Illinois clean-coal ash to be used for the project
- Schedule delivery of Class F and clean coal ash and other supplies to Crumb-Colton Block Co., Rockford, IL
- Receive remaining materials at UWM-CBU
  - Cement and aggregate samples from Crumb-Colton Block Co., Rockford, IL; and Class F and Clean coal ash samples
- Complete physical characterization of aggregates and cement samples from United Ready-Mix, Peoria, IL
- Begin physical characterization of aggregates and cement samples from Crumb-Colton Block Co., Rockford, IL
- Complete remaining physical characterization tests of both Illinois coal ashes
- Begin chemical characterization of both Illinois coal ashes

## **DIFFICULTIES AND PROJECT DELAYS**

- The ICCI contract was revised by ICCI, sent to UWM and UWM executed the contract document and returned it to ICCI. UWM-CBU does not anticipate requiring additional time to complete the project. However, it may become necessary to request an extension since some of the long-term tests for this project require sufficient time to properly cure the test specimens before testing them. To complete the project tasks within the contract period, UWM-CBU has revised the order of the concrete products manufacturing to begin first with the dry-cast concrete products and then produce the concrete mixtures. Dry-cast concrete products are scheduled to be manufactured in February 2000 at Crumb-Colton Block Co., in Rockford, IL and then in April 2000 continue with the concrete mixtures at United Ready-Mix, in Peoria, IL. The duration of the production of the concrete and dry-cast concrete product mixtures would be shortened to one month each from the originally projected three months. This should bring the project back to its scheduled completion date of October 30, 2000.