

COUNCIL ACTION FORM

SUBJECT: PROVIDE ADDITIONAL ENGINEERING AND RELATED CONSULTING SERVICES FOR THE DESIGN AND ENGINEERING OF THE CITY'S STEAM ELECTRIC PLANT'S ASH SITE NECESSARY TO COMPLY WITH U.S. EPA'S COAL COMBUSTION RESIDUALS (CCR) RULE

BACKGROUND:

On April 17, 2015, a Final Rule entitled "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals (CCR) From Electric Utilities" was published in the *Federal Register*, which regulated the disposal of ash in surface impoundments and landfills resulting from the burning of coal in electric utility boilers.

In response to this emphasis by the U.S. EPA on coal ash sites, the City of Ames Electric Services began looking for a consulting firm that specialized in coal ash site activities, with deep understanding of the state and federal regulations governing coal ash sites, especially U.S. EPA's CCR rule.

In 2017, the City needed to comply with several near-term requirements of the CCR rule. For this scope of work, the City issued a request for proposals (RFP) that resulted in the City receiving nine (9) proposals ranging in price from \$30,710 to \$124,350, with an average price of \$76,555.33.

SCS Engineers of Clive, Iowa, was selected as the preferred engineering consultant from the nine proposals for this initial project based upon the combination of technical expertise and price (SCS's proposal was the lowest priced). On December 19, 2017, SCS Engineers was issued a Purchase Order to complete nine (9) studies/reports required to comply (by April 17, 2018) with the CCR rule.

Compliance with the CCR rule will ultimately require a major reconfiguration of the existing ash site in which approximately one-half of the site with coal ash will become a closed-in-place landfill, and the remaining half will be reconstructed as a new lagoon to receive ash from the power plant as it continues to burn refuse derived fuel (RDF). The design and engineering for reconfiguring the existing ash site into the closed-in-place landfill and the lagoon is well underway by SCS Engineers.

Recently, due to the planned demolition of a major portion of the City's old water treatment plant located just east of the City's Steam Electric Plant, Power Plant staff inquired about the possibility of locating an ash collection system close to the Power Plant on land made available by the demolition. If this concept is viable technically and economically, it could save money by extending the life of very expensive ash transport (sluice) piping, and

significantly reduce the number of ash line plugs that power plant personnel historically have had to repair.

THIS ACTION:

This action, for an estimated price of \$135,000 (to be invoiced on actual time and materials expended) to SCS Engineers of Clive, Iowa, is for additional consulting engineering services necessary to complete the design and engineering to reconfigure the ash site to comply with U.S. EPA's CCR rule. As previously stated, this would include the in-place closure of one-half the site as a landfill plus the reconstruction of the remaining half of the site as a new lagoon to receive RDF ash from the Power Plant as it continues to burn refuse derived fuel. The additional consulting engineering services would now include the design and engineering of an ash collection system located close (400 to 500 feet) to the City's Steam Electric Plant. Besides design and engineering services, the scope of work would also include the work to acquire the necessary permits from the Iowa Department of Natural Resources for the installation, the preparation of plans and specifications necessary for bidding and construction, and an engineer's estimate of the cost of the project.

Staff believes that proposed cost by SCS for these services are reasonable based on the relatively small increase in the time and material rates that were previously bid back in 2017.

The rationale for locating the ash collection system close to the Power Plant would be to reduce costs and improve employee safety. The current pipeline required to transport the ash to the impoundment is lined with basalt to resist the abrasion of ash as it is sluiced (with water) from the Power Plant to the ash impoundment. The current life of the basalt-lined pipe is approximately 10 years, this after rotating the pipe 120 degrees two times in order to utilize the full internal surface of the pipe. The current pricing of the ash transport piping is approximately \$5,000 per 25 feet of pipe, so the full replacement of the ash transport pipeline of 3,900 feet would cost \$780,000 (for the pipe alone). Furthermore, Power Plant employees have to regularly find and open the sluice pipeline to remove RDF ash that has plugged the line. Finding and unplugging the sluice line anytime is a disagreeable task, but in the winter while battling cold and ice (from water draining from the pipe and then freezing) is especially disagreeable and presents a substantial safety hazard.

The concept of locating the ash collection system close to the Power Plant would be to pump and sluice ash and water from the Power Plant to the ash collection system where the largest, heaviest, and most abrasive ash would quickly settle out of the water. The water with the remaining ash would then be collected in a sump and pumped to the ash site impoundment where the ash remaining in the sluice water would settle out in the impoundment. The 3,400 feet of ash line from the basin sump to the ash site impoundment should not be at risk for plugging because the ash remaining in the water would be suspended in the water and the particle size would be very small. The life of the same 3,400 feet of ash line (from the basin sump to the ash site impoundment) would

be extended significantly since the abrasiveness of the ash remaining in the sluice water would be very low. Being at risk for plugs in only 500 feet of line versus 3,900 feet of line, coupled with increased life of the ash line due to the reduction in internal abrasion of the pipe would constitute a tremendous improvement and cost savings.

Conceptually, building an ash collection system close to the Power Plant is appealing, and if viable technically and economically, would save money over time and would reduce the safety risks associated with unplugging 3,400 feet of ash sluice line.

The concept may ultimately not be viable, however, the only way to prove viability is to spend substantial design, engineering, and cost estimating work on the concept. **In addition, this engineering study will take into account the plans to expand the existing Technical Services building which is operated by the WPC Department and will remain after the demolition of the old Water Treatment Plant.**

The Ash Pond Modification Project budget in the CIP has an available balance of \$5,710,442.

ALTERNATIVES:

1. Approve a Purchase Order in the amount of \$135,000 to SCS Engineers of Clive, Iowa, to provide additional consulting services to complete the design, engineering, plans and specifications, permitting, cost estimating, and related services necessary to modify and reconfigure the ash site to comply with the provisions of U.S.EPA's coal combustion residuals (CCR) rule.
2. Reject the proposal and solicit equivalent engineering services from another engineering firm.

CITY MANAGER'S RECOMMENDED ACTION:

This scope of work is necessary for the City of Ames Steam Electric Plant to continue to function and comply with U.S. EPA's CCR rule. Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, as noted above.