



REQUEST FOR PROPOSAL



Aiken County Public Service Authority
Horse Creek Waste Water Treatment Plant

**REQUEST FOR PROPOSAL FOR TECHNICAL APPROACH,
ENGINEERING AND CONSTRUCTION MANAGEMENT SERVICES
FOR PUMP STATION NUMBER ONE WATER HAMMER
MITIGATION PROJECT**

REQUEST FOR PROPOSAL

AUGUST 2015

1930 University Parkway • Room 3201 • Aiken • South Carolina • 29801
803-642-1540 • www.aikencountysc.gov



Becky Dawes
Procurement Director

I Request for Proposal (RFP)

Aiken County Government is soliciting proposals & budgetary estimates for Public Service Authority (ACPSA) located at 70 PSA Road, Beech Island, SC 29842. Proposal 16-03-P, Water Hammer Mitigation Project. Firms must be qualified for an economically viable technical approach, professional engineering and construction management services to either retrofit, rehabilitate, or replace pneumatic / hydraulic valve actuator assemblies on Dezvirk™ eccentric plug valves for a water hammer mitigation project. Inclusive in this project is implementation of secondary/backup water hammer protection, upstream of the fore mentioned plug valves, in the likelihood either or both of the Dezvirk™ valves fail.

II Background / Goals

The Aiken County Public Service Authority (PSA) is a regional 20 MGD biological extended aeration wastewater treatment facility located in the western portion of Aiken County, South Carolina. The PSA was designed and constructed in the late 1970's and serves a three county area (Aiken, Edgefield, Saluda counties). After evaluating aging process equipment, there exists a possibility of catastrophic damage (resulting from water hammer) to equipment/piping if power is interrupted and or critical pump train/header manifold isolation components unexpectedly fail. ACPSA project goals are to improve reliability and redundancy to prevent water hammer damage at its head-works pump stations.

III Supplemental Information

Raw waste water is received into a wet-well (Head-works) designated as Pump Station Number One (PS#1). The major components of PS#1 include four 400 HP variable speed centrifugal pumps, each with a suction / discharge valve and check valve. This pump train discharges into a 60" ductal iron header which splits into a 42" and 48" ductal iron pipe. Immediately after the split are Dezvirk™ 42" & 48" pneumatic / hydraulic actuated eccentric plug valves. These valves are original plant equipment and were installed in 1978.

ACPSA Valve Numeration and current configuration specification

PS1 – 13	42" plug valve / manufacture:	Dezvirk
	Type:	4250 eccentric plug valve
	Model #:	9090130



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Size:	250
Body:	CI
Seat:	17
Temp:	180°F
Part#:	677239-7-1
Packing:	TFE

ACPSA Plug Valve Numeration and current configuration specification (continued)

PS1 – 14	48" plug valve / manufacture:	Dezvirk
	Type:	4400 eccentric plug valve
	Model #:	9090131
	Size:	4850
	Body:	CI
	Seat:	17
	Temp:	180°F
	Part#:	677239-8-1
	Packing:	TFE

ACPSA Plug Valve Actuator configuration specification: It should be noted that PS1-13 & PS1-14 both utilized the same Bettis T820 series pneumatic actuator with ¾" ASCO™ four (4) way solenoid 120/60 NEMA III, ¾" speed controls. Hydraulic Manual Control System is M4 type.

Actuator type	Robot-arm T-820-M4 Manual override Rapid Close Pump Check
Actuator:	(PS1-13 = 6037) (PS1-14 = 6805)
Manufacture	Bettis
Model#:	T820B-H-S
Serial #:	81478-1
Max Working Pressure:	115 PSI
Min Test Pressure:	150 PSI
Instructions:	Y-59630

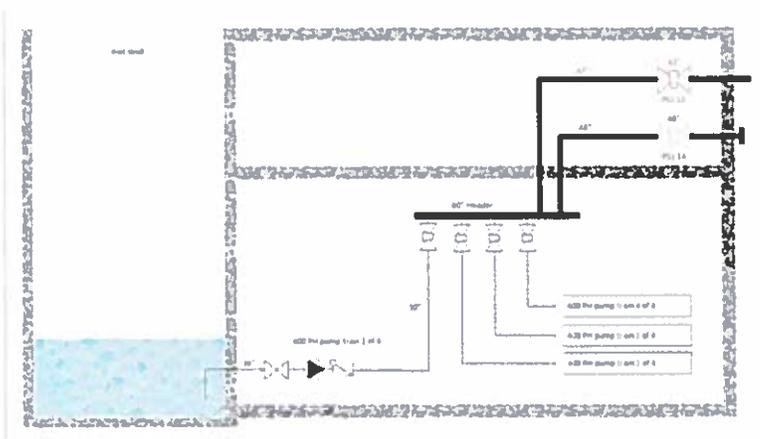
Current replacement actuator is a G3 series. Disassembly / assembly manual is available from Bettis™ / 803-477-4100. Bettis™ factory representative (Gary Burroughs) 281-477-4513.



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PS1-13 is the only operational plug valve; PS1-14 is out of service and has never been utilized since original installation in 1978. PS1-14 will be placed in service if plant expansion becomes necessary. Currently PS1-14 discharge piping is blank flanged immediately after a wall penetration at PS#1.



Raw waste water pumped from the Wet Well at PS#1 passes through PS1-13 (active plug valve), into 42" concrete yard piping and discharges vertically into the bottom of an open atmosphere flow splitter box.

ACPSA WWTP is currently upgrading to 26 MGD.

Flow Path / Elevation Study (From Wet Well to Flow Control Box at Grit Chamber)

PSA#1 & Wet Well

Elevation at PS1-13/PS1-14 center line discharge pipe = 136'

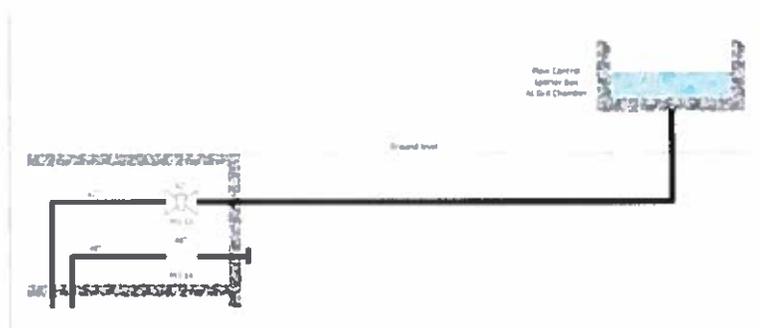
Elevation bottom of wet well = 87' 4"

Wet Well average water level = 12.5'

Elevation of pump centerline = ~97'

Elevation of header (cl) = 109' 6"

PSA#1 to Grit Chamber Flow Control Box





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Yard piping from PS#1 to Grit Chamber is 42" concrete. Center line of pipe is 136.00'

Bottom of flow control box = 154" = 6"

Flow control box average water level = 3'

PSA#1 to Grit Chamber

Yard piping from PS#1 to Grit Chamber is approximately 750' in length.

IV Project Proposal Requirements

All respondents are required to provide demonstrated experience in similar water-hammer mitigation upgrades or new installations projects.

Important criteria in the selection will be as follows:

1. Demonstrate that the firm has the technical ability to perform the required work to properly execute the scope of the project. This includes a detailed **description** and **budgetary estimates** for.
 - Technical approach to include any & all proposed equipment, piping, controls, etc.
 - Any Necessary Transmission/Hydraulic Surge Analysis
 - Engineering Services
 - Construction Management of the project
 - Cost to Construct (Firm Submitting proposal may subcontract out construction; however, ACPSCA will require that any firm responding to this RFP act as project manager and a representative of such be present onsite during construction.
2. Submit a detailed project schedule/timeline from award, through system evaluations/walk downs, engineering, and construction completion.



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3. Provide two references (with contact information) where the firm successfully completed similar water-hammer mitigation upgrades or new installations projects.
4. **MAXIMUM allowable PS#1 downtime / offline period will be 8 hours. This is an absolute requirement during any project activity. The only exception is if bypass pumping is incorporated into the project technical approach; along with any associated costs.**

Pursuant to Aiken County Procurement Schedule and Overall Project Costs / Complexity, ACPSA may elect to implement this project in phases; with separate project start, duration and completion dates.

V Where & How to Submit Responses

Potential Respondents are invited to submit three (3) copies of their proposal for this project to arrive no later than 3:00 p.m. on Tuesday, September 22, 2015 to:

Aiken County Procurement
1930 University Parkway Room 3201
Aiken, South Carolina, 29801-2833

Respondents shall include the following information on the outside of the sealed envelope(s) or box(es):

- (1) Name of Respondent
- (2) Proposal 16-03-P, Water Hammer Mitigation Project

Submittals should be limited to no more than **30 face pages** not including cover letter, section dividers and table of contents.

ACPSA will review all RFP submittals and the selected firm will be notified by Friday, October 30, 2015.



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The Aiken County Public Service Authority is not responsible for any costs associated in the preparation of the statement of qualifications.

VI Mandatory Meeting

A mandatory pre-submittal meeting will be held on Wednesday, September 2, 2015 at 10:00 a.m. Please be prompt.

Pre-submittal meeting locations:

Aiken County Public Service Authority
Horse Creek Waste Water Treatment Plant
70 PSA Road
Beech Island, SC 29842