



DANE COUNTY DEPARTMENT OF WASTE AND RENEWABLES

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NOVEMBER 3, 2022

ATTENTION ALL REQUEST FOR PROPOSAL (RFP) HOLDERS
RFP NO. 322042 - ADDENDUM NO. 3
PRIMARY H₂S SYSTEM UPGRADE DANE COUNTY RNG PLANT

PROPOSALS DUE: TUESDAY, NOVEMBER 15, 2022, 2:00 PM.
DUE DATE AND TIME **ARE NOT** CHANGED BY THIS ADDENDUM

This Addendum is issued to modify, explain or clarify the original Request for Proposal (RFP) and is hereby made a part of the RFP. **Proposers must acknowledge this addendum on the Signature Page and submit with Proposal as outlined in the RFP Cover Letter.**

PLEASE MAKE THE FOLLOWING CHANGES:

1. GENERAL

Enclosed are the facility tour meeting minutes and attendance sheet.

PLEASE NOTE THE FOLLOWING PROPOSER SUBMITTED QUESTIONS:

Question 5: Table 1 indicates 10,000 ppmv H₂S as the maximum while Table 2 indicates a maximum of 8,000 ppmv H₂S. If the unit is sized on 8,000 then it will not make spec at 10,000 ppmv. Please clarify the design case sulfur load.

Answer 5: Table 1 provides maximum ranges for individual process characteristics. Table 2 provides the max daily loading.

Question 6: Request P&ID's covering the inlet boosters through the treatment compressors.

Answer 6: See Attachment D drawings.

Question 7: What level of overall liability will Dane County want?

Answer 7: Dane County's preference is to have the successful proposer meet the liability levels listed in the RFP and included Sample Contract. Dane County may be able to agree to lower levels of coverage. Any proposed reductions in coverage must be clearly listed in the Proposal.

Question 8: What level of guarantees will Dane County want?

Answer 8: Dane County's preference is to have the successful proposer meet the warranties and system performance listed in the RFP. Dane County may choose to negotiate specific performance guarantees with potential awardees. Proposers are encouraged to include proposed performance guarantees in the Proposal.

Question 9: What byproducts are generated from the current system and how are they managed? Who does W&R work with now to find beneficial reuse options??

Answer 9: Primary byproduct from current system are slurry of sulfuric acid and elemental sulfur. During normal operation, effluent discharge batches are neutralized on site with caustic soda and discharged to the sanitary sewer district. During maintenance events, higher volumes are captured daily, neutralized, and trucked to sewer district treatment facility.

W&R looked into the possibility of using the flush maintenance water and/or sludge for beneficial reuse on fields, however, efforts on this is paused until we have the new system's byproduct profile. Initial non-committal efforts have been with Synagro.

Question 10: What are the current discharge limits, quality, flow, etc?

Answer 10: The RNG facility effluent is combined rest of landfill property and operates under single permit. The RNG plant does not have specific quantity limit, but currently discharges about 5,500 gallons per day on average. Average daily discharge quality must be at or above 8.0 pH; and discharge at all times must be between 5.5 pH and 11.0 pH.

A permit alteration is expected for the operation of new H2S treatment system and shall be completed by Dane County with chosen system specific details.

Question 11: What water will be available? Is there existing infrastructure?

Answer 11: Current water is supplied at edge of concrete pad from private well. City supplied chlorinated utility water is expected to be in place before or during installation of the new H2S system. In both cases, please note water has approximately 23 grains of hardness.

Question 12: Is raw landfill gas being analyzed at inlet and outlet of existing treatment system? Is there an expectation that the proposal include a gas analysis system?

Answer 12: The current system has online measurements for flow, temperate, pressure, O2, H2S, CH4, and CO2 at inlet. Only flow and pressure measurements shall be available for new H2S system integration.

For the purposes of the response, Dane County requests that new system provide all new analytical equipment for inlet and outlet conditions required to operate and as detailed in technical specifications. If not included in scope, required analytical criteria shall be detailed as required inputs to system.

Question 13: What flow ranges & pressures are allowable for inlet & outlet of a new system? Is it restricted to the present pressure specs?

Answer 13: Preferred and alternative pressure ranges are detailed in technical specifications. W&R is open to the possibility different pressure conditions, but facility modifications leading to additional down time significantly impact revenue. And will be considered in overall value of proposal.

Question 14: What other existing utilities are available?

Answer 14: Facility is connected on dedicated fiber node. Connection on fiber WAN available. Cellular service is available but poor quality.

Question 15: Is the proposed footprint non-negotiable?

Answer 15: Footprint provided is the planned and preferred area. Alternates may be considered with compelling reasons and value opportunity.

Question 16: Are there any systems to avoid within immediate proposed construction area?

Answer 16: Identified system area will be made free of nearly all obstructions, stub ups, etc. The northern boundary and tie-in to existing booster blowers is sensitive to plant operations and revenue. Risks and impacts to booster blowers should be minimized where possible.

Question 17: Is Dane County using buy back gas for thermal oxidizer?

Answer 17: Not buyback technical, but fuel gas is supplied separately from process and send out revenue line. And supplied by local distribution company.

Question 18: Are there fluctuations in PSA recirculate flows and plant inlet flows? Do vacuum & flow rates changes? Are there trends available?

Answer 18: The recirculate line from the plant varies in flow cyclically over minutes and also average variance that changes over hours and days depending on site conditions. The impact is most directly seen in pressure trends that would be at the outlet of H₂S treatment system. Additionally, the PSA system causes cyclic fluctuations in flow at inlet to plant.

Vacuum conditions on the landfill are relatively constant with occasional adjustments for specific abnormal conditions. Flow and H₂S conditions change significantly with weather including barometric and rainfall events. Impacts from these are included in process conditions range selection.

Selected trend data is included in Attachment F.

Question 19: Is there another H₂S treatment system used or is removal based only on the present primary system?

Answer 19: Dane County currently utilizes upstream pretreatment on the landfill vacuum side with FerroSorp to control incoming H₂S levels for current system. The new system is specified to allow operation without these pretreatment system unless required for maintenance events. Dane County currently utilized downstream H₂S polishing with activated carbon media in lead/lag vessel arrangement. The polishing system will stay in place for similar usage.

Question 20: There is a wide pressure margin on flow between pressure preferred and alternate pressure classes. Please clarify.

Answer 20: Elevated pressure classes alternatives include additional and varying recirculate volumes from PSA treatment process. These volumes are incrementally additional to incoming landfill gas feed.

Question 21: Please provide details on anticipated tie in locations.

Answer 21: Tie-In locations drawings are included in Attachment D drawings.

Question 22: What's the ramp up of H2S and gas? Does W&R anticipated increased flows later? What capacity needs are considered?

Answer 22: Please see Figure 5 in Attachment E for the most recent flow and H2S modelling. Recent operational data and experience suggests Dane County is running ahead of model for H2S loading. An updated model is expected to be finished before awarding this RFP.

Question 23: What is the H2S concentration before pretreatment? Is historical H2S data available?

Answer 23: Dane County Landfill Site #2 has two areas, the permanently capped Western Hill and the Eastern Expansion (active area, C&D fines were placed shortly after MSW was placed ~2017). H2S concentrations vary considerably amongst these two area. The western hill produces 200-300 ppm H2S combined. The Eastern Expansion produces 3,000-5,000 ppm H2S combined. Due to pretreatment for the Eastern Expansion and without submetering flows, there is no cohesive combined H2S inlet data record.

Question 24: When will the site engineering and integration RFP be let?

Answer 24: Related future RFP/RFB will be released separately after selection of RFP 322042.

Question 25: What is the standard temperature range of the incoming gas?

Answer 25: Inlet gas to RNG treatment system and new H2S system is cooled with air cooled heat exchanger on temperature control. System has a maximum 25F approach to ambient at maximum cooling load conditions. Temperature is currently controlled at 80-90F. Seasonally it may range 40-120F.

Question 26: Is there an intermediate treatment plan? Is the awardee expected to make provisions for intermediate treatment?

Answer 26: Awardee will not provide intermediate treatment plans or capabilities. Dane County will rely on existing systems and optionally additionally temporary systems for H2S control.

Question 27: Where does W&R operate the gas plant from?

Answer 27: Primary Facility Balance of Plant & Treatment Systems are operated locally and remotely on hardware located in Landfill Blower Building. Onsite office is planned that will replicate capability.

Enclosures

Attachment D: Selected Drawings for Gas Systems

Attachment E: Selected Trend Data

Attachment F: Landfill Flow and H2S Model

If any additional information about this Addendum is needed, please contact Michael Wyrick at (608) 405-9230, or Wyrick.Michael@countyofdane.com.

Sincerely,

Michael Wyrick

Project Manager

Facility Tour Minutes and Meeting Attendance