

MINUTES OF THE SPECIAL JOINT MEETING OF THE AMES CITY COUNCIL AND ELECTRIC UTILITY OPERATIONS REVIEW AND ADVISORY BOARD

AMES, IOWA

OCTOBER 15, 2013

Mayor Ann Campbell called the Special Joint Meeting of the Ames City Council and Electric Utility Operations Review and Advisory Board (EUORAB) to order at 7:00 p.m. with Jeremy Davis, Matthew Goodman, Jami Larson, Victoria Szopinski, and Tom Wacha present. Council Member Orazem arrived at 7:05 p.m. EUORAB members present were Cathy Brown, Jim Converse, and Max Morris.

STAFF PRESENTATION REGARDING ENERGY RESOURCE OPTIONS: City of Ames Electric Services Director Donald Kom recalled that City staff has been working with a consultant (Black & Veatch) over the last two years on an Energy Resource Options study regarding the future of electric generation in Ames. Staff and the EUORAB have spent time reviewing the findings and looking at possible alternatives moving forward. At least two public input sessions will be held before the Council is asked to make a final decision. Mr. Kom indicated that this decision will have a major impact on the electric utility, setting its direction for the next 20-plus years.

Director Kom explained that the Ames Municipal Electric System owns four generators: two coal-fired units (Units 7 and 8) at the Power Plant and two peaking generators located on Dayton Avenue. With those generators, the Utility is able to produce all of the electricity needed by the residents of Ames at any given time. Approximately half of the city's energy is produced internally by burning coal and refuse derived fuel (RDF) from the Resource Recovery Plant. Mr. Kom stated that the Plant is operated for a variety of reasons, one being that burning RDF is an environmentally beneficial way to get rid of garbage. Another is for reliability; having internal generation allows the City to suffer less in the event of a power outage or failure. Mr. Kom explained that, aside from providing electricity for the city, the Power Plant also operates in order to meet "capacity obligations." Whether generated internally or bought from the market, the Utility needs to be capable of producing at least 107% of its ultimate peak demand; owning capacity or having it under contract is a requirement. Mr. Kom noted that the City also has a long-term wind contract that produces some energy, but it is located outside city limits and it does not provide the same capacity and reliability protection as the Plant's main generation.

According to Mr. Kom, the driving force behind this discussion is that the United States Environmental Protection Agency (EPA) is coming out with new regulations related to mercury, NOx (nitrogen oxides), SOx (sulphur oxides), coal residue, etc., over the next few years, and staff has been evaluating those rules to see how the Power Plant needs to adjust. Additionally, natural gas has dropped in price in recent years, which factors into looking at it as a long-term fuel source. Mr. Kom explained that City staff came up with 16 different alternatives, reviewed them with the consultant, and eventually came to two fundamental options: continuing to power Units 7 and 8 with coal and adding equipment to meet EPA guidelines, or converting both units to natural gas. While evaluating both options, staff concluded that the burning of RDF does not change the final recommendation one way or another. Not having a viable alternative to do anything else with the RDF, staff's analysis assumes that it will continue to be burned.

Electric Services Assistant Director Brian Trower reviewed the general changes that would be required to either continue operating on coal or to convert the Plant to natural gas. He explained that the main force driving the need to change is the EPA's newly-adopted Mercury and Air Toxics Standard (MATS), which regulates emissions of acid gases, mercury, and ten other heavy metals.

He stated that, in order to keep Units 7 and 8 on coal and in compliance with MATS, three major installations of equipment would be necessary. The first would be a dry sorbent injection system, which would neutralize acid gas emissions. Additionally, a powder activated carbon system would be installed to collect and strip mercury out of the flue gas stream. Third, a fabric filter bag house would be required to manage heavy metal emissions. Mr. Trower indicated that the addition of the fabric filter would cause the generators to be “de-rated.” Because of the Plant’s capacity obligations (107% of peak load), the Utility would then either need to somehow bolster the existing operation or purchase a combustion turbine to offset the de-rating.

According to Mr. Trower, in order to convert the Power Plant to natural gas, the Utility would first need to locate a natural gas source. The City could either contract with a provider such as Alliant Energy, or build its own pipeline directly to a wholesaler. Director Kom added that there is not a local pipe currently available that is capable of meeting the demand of the Plant; the closest high-volume gas line is located in Story City. The City of Ames would either build a line to Story City or enter into a long-term contract with Alliant and use its pipe. Council Member Orazem inquired about the possibility of other potential users subcontracting to use the City’s line if it were built. Mr. Kom said that the City would build the line to power its own generation. He cannot speculate what else the line might be used for.

Mr. Trower explained that another component to natural gas conversion would be to put new gas burners in the boiler. Additionally, a natural gas source would need to be located outside the building and then plumbed inside. Fire protection upgrades, venting, safety equipment, combustion controls, and other code considerations would also apply.

Upon being questioned by Council Member Goodman regarding building a pipe versus contracting with Alliant, Mr. Kom indicated that there is still a lot of research to do and discussions to have with Alliant. He stated that if the City does build a pipe, it will not be creating a whole new utility for the City to sell gas to hundreds of homes and businesses; it would simply be a fuel source into the Power Plant.

Mr. Kom presented the Council with a “stop light” table, which highlighted regulatory, permitting, political, and social issues, the status of each issue, and the impact of each if the Plant remained on coal or switched to natural gas. The table was reviewed in detail by Assistant Director Trower.

Title V Operating Permit: Mr. Trower explained that the Title V Operating Permit is an existing requirement that the Plant currently maintains. Under the coal option, the Permit would need to be modified and reissued to reflect the changes in the Power Plant and pollution control equipment. Prior to Permit reissuance, there would be a mandatory public notice period, during which “third party interveners” (environmental groups or other organizations that want to weigh in) would likely object. Mr. Trower explained that an annual air emissions inventory is required to maintain the Operating Permit; the Plant pays a fee for every ton of pollution emitted. If the Plant remained on coal, the annual inventory process would be more difficult, with significantly more complex stack testing.

Under the natural gas option, the Permit would also need to be modified and reissued. During the public notice period, third party interveners are not likely to object. The annual air emissions inventory process and stack testing requirements would be less than current requirements.

Cross State Air Pollution Rule (CSAPR): Mr. Trower provided a history behind the Rule and explained that its final ruling is awaiting determination from the U.S. Supreme Court. There would likely be both NO_x and SO₂ (sulphur dioxide) compliance issues under coal. Under natural gas, there would be possible NO_x issues, but no SO₂ compliance issues. Mr. Trower added that NO_x is produced as a part of combustion, not necessarily from the fuel source itself.

Mercury and Air Toxics Standard (MATS): As stated earlier, Mr. Trower indicated that the MATS rule has one of the biggest impacts on the future of the Plant. Standard compliance is required by April of 2015; the City has already filed for an extension, which is still pending, through April of 2017. Mr. Trower reiterated that three major equipment installations would be required under the coal option. However, the MATS rule does not apply to natural gas units. Council Member Orazem asked if natural gas is exempt because it doesn't have the same emissions issues as coal. Mr. Trower said that it is conceivably exempt because, from a mercury and heavy metals standpoint, it is a cleaner fuel. However, he believes that it may also be exempt partially for political reasons.

Coal Combustion Residuals (CCR): According to Mr. Trower, the CCR rule is highly politicized and controversial, and is not yet finalized. If and when there is a final ruling, the City's existing ash pond would need to be excavated to remove CCR solids and then lined, or the site would need to be phased out and closed within five years of the final ruling. If the Plant was converted to natural gas, the CCR rule would not apply. However, the existing ash pond would still need to be phased out and closed, likely within five years of the ruling.

National Pollutant Discharge Elimination System (NPDES): The NPDES rule is currently in place. With coal generation, coal pile runoff and cooling tower blowdown would continue to be regulated as it is now. Under natural gas, the cooling tower blow down would be regulated as it is now. The coal pile would be cleaned up and reseeded, so coal runoff would no longer be an issue.

Effluent Limitations Guidelines (ELG): Mr. Trower indicated that the ELG is a proposed rule published in June of 2013, and it could force major equipment modifications for a coal-powered plant. Fly ash from the fabric filter bag house would likely need to be handled dry or dewatered for zero discharge. Non-chemical metal cleaning wastes, such as wash water from ash removal, could be subject to copper and iron limits. The scrutiny would be similar for natural gas since RDF would continue to produce fly ash. However, it would be more manageable since the Plant would discharge an estimated 80 percent fewer tons of ash per year. Council Member Larson recalled that there had been discussion in the past about RDF gasification. Mr. Trower said that, at the moment, the plan is to continue direct burning of RDF.

Startup, Shutdown, and Malfunction (SSM): The SSM is a proposal that is pending final ruling. Mr. Trower stated that it would be a big issue for a coal-powered plant; it would likely require Units 7 and 8 to be retrofitted to be able to light off and start up the boiler with natural gas. If the plant were powered by natural gas, there may be a minor SSM issue relating to NO_x.

Best Available Control Technology (BACT): Mr. Trower explained that BACT is not a rule or law, but rather an expectation that, as units age, are modified, or built new, the best available control technology should be used. With the coal option, even with the added equipment discussed earlier, there would still be compliance issues for NO_x and SO₂. A third party

intervener could potentially sue the City if it questioned the Plant's BACT compliance. Under natural gas, there would still be a possible compliance risk related to NOx.

National Ambient Air Quality Standard (NAAQS): The NAAQS relates to ground-level emissions exposure. Mr. Trower indicated that staff was initially concerned about the Plant's ability to comply with the Standard due to its location at the end of Main Street, inside city limits, and within the Municipal Airport's three-mile fringe. The consultants and City staff modeled both coal and natural gas options thoroughly and determined that the Plant can operate under existing patterns and maintain NAAQS compliance.

Prevention of Significant Deterioration - New Source Review (PSD-NSR): Mr. Trower explained that PSD-NSR is an existing construction permit process through the Iowa Department of Natural Resources (DNR) that is required in order to modify the Plant. If the Plant remained on coal, permits would be required for the three major equipment installations. Detailed and complex analyses would be required to justify the use of coal, and a long lead time would likely be needed in order to receive the permits from the DNR. There would also be a mandatory public comment period, during which third party intervention would be likely. Permits would also be required for modifying and converting the Plant from coal to natural gas. However, analyses required by the DNR would be minimal, and lead time for permitting would likely be normal.

New Source Performance Standard (NSPS): According to Mr. Trower, the NSPS is an existing rule that applies to new or modified plants. He explained that there is an exclusion, as long as the modifications cost less than 50% of the reconstruction costs. The modifications needed to remain on coal would likely fall under this exclusion. Unit 7 was originally designed to burn natural gas prior to 1971, so it is automatically excluded under the natural gas option. For Unit 8, the NSPS exclusion would apply as long as the modifications would cost less than 50% of the reconstruction costs.

Greenhouse Gas Regulations - CO₂e (GHG): Mr. Trower said that these regulations are currently being written by the EPA and should publish around June of 2014. Because coal produces 83% greater GHG emissions than natural gas, these regulations would be very challenging for a coal-fired plant.

Construction Permitting - Non-Power Plant: No construction permitting would be required under the coal option. Mr. Trower explained that construction permitting would also not be required if a tariff for natural gas can be reached with Alliant Energy. However, if the City were to build its own natural gas line, it would require Iowa Utilities Board franchise approval, as well as easement agreements from landowners along the route.

Third Party Intervention: Mr. Trower reiterated that third party intervention is likely if the Plant remains on coal; the City could expect to be targeted eventually. He explained that, due to the threat of a lawsuit, both MidAmerican Energy Company and Alliant Energy have signed "consent decrees" with a third party environmental group. Intervention is still possible, but not likely, if the Plant were converted to natural gas.

Fuel Delivery: According to Mr. Trower, the (coal) customer base of the Alliant Energy-Williams Bulk Transfer facility in Williams, Iowa is shrinking, and Alliant's interest in operating the facility long-term is unknown. The captive customer price of a future contract for coal

delivery would be expected to escalate significantly. Mr. Trower noted that when the City's current contract renewed in 2010, the delivery charge increased by 50%.

The two natural gas supply options (contracting or building a line) were discussed. Mr. Trower pointed out that if the City were to contract with Alliant, that would only be for the delivery of the gas. For both supply options, the City would still be able to "shop" for natural gas prices. Upon being questioned by Mr. Goodman, Director Kom indicated that there is an open, tradeable market for natural gas, similar to the Midwest Independent Transmission System Operator (MISO).

Ash Disposal: Mr. Trower reiterated that there would be significant ash disposal issues, as well as collection of fly ash with mercury and acids, with a coal plant. There would be some issues with disposing of RDF ash under the natural gas option.

RDF Burning: If the Plant remained on coal, there would be no change in RDF volume compared to current usage. However, if converted to natural gas, the study estimated that there would be a 13% decrease in the amount of RDF the boilers would be able to consume. Mr. Trower added that the Utility must retain the capability to burn coal to remain as an Electric Generating Unit and not be regulated as an incinerator under the CISWI (Commercial Industrial Solid Waste Incinerators) rule. The coal equipment would be kept to maintain coal capability, even under a natural gas option, because otherwise it would change the way the Plant is regulated. Mr. Trower explained that a coal fire creates a turbulent and aggressive heat release situation; natural gas burns differently. Because of that, staff feels that the Plant could not consume as much RDF successfully. Mayor Campbell inquired about what the City might do with that 13%. Director Kom said that there have already been discussions with Resource Recovery Plant staff, and that the sustainability task force is also working on it. He added that, historically, the Plant has had power outages, during which times RDF is not being burned. There is some data showing that with a more reliable/efficient boiler, the Plant could possibly burn more garbage over the long run. The Plant's overall availability and "up time" may help offset the 13% shortfall.

Employee Impact: Keeping the plant on coal would lead to a probable increase of full-time employees; natural gas would lead to a possible decrease.

Political Acceptance - Public Support: Coal is likely controversial due to the current political discourse regarding using coal as a power plant fuel, and natural gas is likely favorable.

Engineering - Degree of Difficulty: Mr. Trower said that engineering would be difficult due to the limited available space to place new equipment for coal operation. Converting to natural gas would also pose engineering challenges; the routing of gas piping inside the Plant would be difficult. Furthermore, if the City determines to build its own natural gas pipe, engineering of two gas gates and 14 miles of pipeline would be complex and time-consuming.

Construction - Degree of Difficulty: According to Mr. Trower, potential construction challenges are similar to the aforementioned engineering issues.

Mr. Trower concluded that, of the two options, remaining as a coal-powered utility would present more challenges than converting to natural gas.

Director Kom reviewed System Cost Impact and Rate Impact charts, which compared the costs of remaining on coal versus changing to natural gas. He pointed out that, on both system cost and rate impacts, coal and natural gas are virtually even. Upon being questioned by Council Member Goodman, Mr. Kom explained that the figures in the charts considered carbon tax, wind energy, purchase power, labor, environmental equipment, and other factors.

A “Natural Gas vs. Coal” pros and cons table was presented and discussed in detail. Mr. Kom noted that a lack of fuel diversification between the City and the energy market is one downfall of converting to natural gas. He explained that gas commodity prices fluctuate; coal prices are more stable. Noting that there were originally 16 different options, Mr. Larson inquired as to whether or not the consultants considered keeping one boiler on coal and converting the other to natural gas. Mr. Kom said that it was considered; however, that option would double the capital costs. Pipe infrastructure would be required for Unit 7, and the extra environmental control equipment for 8, which would result in twice the permitting effort and twice the money. Council Member Szopinski noted that the Plant will maintain the capability of burning coal, which could possibly be an advantage in the long run. Mr. Trower concurred.

Mr. Kom stated that City staff’s recommendation, based on the Black & Veatch study, is to convert the Power Plant from coal to natural gas. He said that this is a monumental, fundamental shift. Staff and EUORAB would like to hold public input sessions on October 28 and 30, and come back at the November 12 City Council meeting to ask for support from Council at that time. Mr. Kom indicated that “the clock is ticking,” because many of the guidelines need to be met by April of 2016.

Council Member Davis asked for the estimated cost of both options. Mr. Kom indicated that the capital cost of natural gas would be approximately \$37 million, not including the cost of building a gas line or contracting with Alliant. Keeping the plant on coal would be close to \$71 million for both Units 7 and 8.

Mr. Goodman noted that many have said that natural gas is a temporary solution. He asked for City staff’s opinion on the topic of nuclear and solar energy. Assistant Director Trower said that the recent disaster at the nuclear plant in Japan has been a major political detriment to nuclear power plants. Furthermore, he believes that a nuclear plant is not an economically viable option in Ames because of its size. With regard to solar generation, Mr. Trower stated that it is not a realistic economic option at this time. Coal-fired generation costs approximately \$30 per megawatt hour, natural gas is around \$60, and solar is close to \$150. Director Kom added that there are applications where solar energy works well, but on a utility scale in the upper Midwest, the prices need to come down more. Additionally, because solar energy cannot be called on during any given moment, capacity obligations might not be met.

City Manager Schainker noted that the Council is being asked to approve the public input process as submitted. Staff will send out letters to Neighborhood Associations, service clubs, and a press release will also be sent out to encourage as much attendance as possible.

Moved by Goodman, seconded by Davis, to approve the Public Input Plan as presented by City Staff. Vote on Motion: 6-0. Motion declared carried unanimously.

COUNCIL COMMENTS: Moved by Orazem, seconded by Davis, to refer to staff the email dated October 10 from Emily Erickson regarding parking on Twain Circle.

Vote on Motion: 6-0. Motion declared carried unanimously.

Moved by Goodman, seconded by Szopinski, to refer to Parks & Recreation staff for feedback the email from Angie DeWaard regarding establishment of a “children’s park” in Ames.

Vote on Motion: 6-0. Motion declared carried unanimously.

Mayor Campbell noted that the Council’s regular meetings in December are on the 10th and 24th; it has been suggested that the second meeting be moved to the 17th.

Moved by Davis, seconded by Wacha, to set the regular meeting dates to December 10 and 17.

Vote on Motion: 6-0. Motion declared carried unanimously.

Ms. Szopinski referenced a letter received from the Young Professionals of Ames (YPA) regarding its participation in the 4th of July fireworks display and funding for such. Discussion ensued regarding the City’s grant program, funding through the Ames Convention and Visitor’s Bureau (ACVB), and the portion of funding from the hotel/motel fund.

Moved by Goodman, seconded by Szopinski, to ask staff to report to Council the dollar amount of hotel/motel funding in the ACVB grant program, and whether or not that amount has changed since the beginning of the program.

Vote on Motion: 6-0. Motion declared carried unanimously.

ADJOURNMENT: Moved by Davis to adjourn the meeting at 8:57 p.m.

Diane R. Voss, City Clerk

Ann H. Campbell, Mayor

Emily Burton, Recording Secretary