SPECIAL MEETING OF THE CITY COUNCIL
OF THE CITY OF SAN ANTONIO HELD IN
THE COUNCIL CHAMBER, CITY HALL, ON
FRIDAY, OCTOBER 18, 1974.

* * * *

The meeting was called to order at 10:00 A. M., by the presiding officer, Mayor Charles L. Becker, with the following members present: COCKRELL, SAN MARTIN, BECKER, BLACK, LACY; Absent: MORTON, O'CONNELL, PADILLA, MENDOZA.

74-51 The following discussion took place.

MAYOR CHARLES L. BECKER: I'm sorry that the other Council members aren't here yet. Perhaps some of them will come in a little later and we apologize at keeping all of you waiting as we have this morning, but since the City Council called for this meeting, we were hopeful that as many of them as possible could be here to hear exactly the answers to the questions that they've had with respect to the plans for energy, and all the other questions that they've had. Sam, do you recall exactly what this meeting is supposed to embrace?

CITY MANAGER SAM GRANATA, JR.: Yes, I believe it's the coal, the status of coal and any other possible energy solution that they're seeking. I think Mr. Deely is prepared to present his program now. So, Mr. Deely, you're going to be the first spokeman and at any time that you'd like for the Council to come to the front row to view the screen, just ask them to.

DR. JOSE SAN MARTIN: Sam, I believe there was another item that I included in that request and that was the question of a local process that....

CITY MANAGER GRANATA: Basic Industries, Tom. I think you can address yourself to that and with that will come up as one of the questions as to why you didn't utilize the Basic Industries and or doing a joint study with Texas Power and Light, or whatever it is.

MRS. LILA COCKRELL: Mr. Mayor, if I might, I'd just like to make one other comment. Now, since I am occasionally known to be a critic, I would also like to praise where I think it is due and I certainly did appreciate the statement that I read from Mr. Berg about the possibility of cutting back and not coming with another request for a rate increase and I think this is definitely moving in the right direction. I just wanted to state my personal appreciation for the comments.

MAYOR BECKER: I join with you in that, Lila, and I'm sure that the other Council members would also if we can by some means bring about circumstances to where we don't have to spend a billion dollars or add to the you might say, the corporate indebtedness of the Public Service, is welcome news to the whole community and that will materially affect their utility bills as we go down through the years. All that debt certainly has a great bearing and a part to play in the formulation of the rate structure so we're very happy to hear that. Mr. Deely, would you like to start your presentation, please sir.

MR. TOM DEELY: Mr. Mayor and members of the Council, we have a presentation which, of course, goes into the future plans for the City Public Service and the citizens. We think this plan is well done. I would like to caution that from time to time these plans do change as conditions change, relatively that is, for example, no one foresaw the fact that gas would be selling for $1.75 a year ago, as of today $1.75. This sort of thing materailly affects what we plan in the way of generating units and what type of units

we need. This presentation is 45 minutes from beginning to end. I think you'll find it very interesting. It certainly is packed with a lot of facts and a lot of hard work has gone into it. We have here as you'll note, Mr. Berg our Chairman, Mr. Centeno, the Vice Chairman, and I think possibly there will be other members of the Board that you know will attend later on. We have put the job of making this presentation on Mr. Arthur Von Rosenberg. Arthur is in charge of our long-range planning. He has done considerable work along with his assistant, Donald Smith, and both of these engineers are petroleum engineers. They are, I would say, some of our finer employees and I think you'll find this interesting. If you can wait until the end of the presentation, I think that most of your questions will be answered, but of course, if you want to interrupt, well, your pleasure is ours. So, if I may, I'll ask Arthur to come forward and you can put the screens up.

MR. ARTHUR VON ROSENBERG, Manager, Planning and Development Department, City Public Service Board made a 45 minute presentation entitled, THE PRESENT CPS ELECTRIC GENERATION SYSTEM AND ITS PROSPECTS FOR THE FUTURE. Members of the Council were each furnished a copy of the text of the presentation and a copy is filed with the papers of this meeting.

The discussion continued as follows:

MR. VON ROSENBERG: That's all of my prepared report.

MAYOR BECKER: Does the Council have any questions they would like to ask Mr. Von Rosenberg?

MR. GLENN LACY: Are there any more slides.....inaudible

DR. SAN MARTIN: Mr. Deely, are you going to answer the questions or Mr. Von Rosenberg?

MR. DEELY: Probably Mr. Von Rosenberg will answer the majority of them.

DR. SAN MARTIN: Well some of them will be a matter of policies. Maybe Mr. Tom Berg or Mr. Centeno might want to. Let me start with the first question, whoever wants to answer will be fine with me. Now, I think that one of the most important items that this Council and the City of San Antonio is concerned with is the question of the coal contract. We've been having nightmares over the 1961 gas contract, and I don't think anybody wants to see a repetition of the same situation that has created such havoc in the City of San Antonio. Now, would you explain the reliability of the coal contract, the terms of the contract, the transportation facilities, the cost of these facilities and everything that assures the citizens that there won't be a repetition of the nightmare that we're going through.

MR. VON ROSENBERG: I think that the contract that we have, Dr. San Martin, with the Shell Oil Company was the most desirable contract that we've looked at and we only had two at the end but we've looked considerably at a lot of them. I think that the contract that would most likely meet the objectives that we had of an assured supply at a reasonable cost. One reason that I think it does this is that it gives adequate financial protection to both the buyer and the seller. It's a contract that has reopeners in it to get back to the market price. I think if we get into a situation in where we are paying considerably lower than the market price, and we will find that the quite generous force majeure type of clauses of these contracts protects that shipper up there and all of them have them. They all want protection on force majeure. I understand that most recently when we had coal shortages and the prices were going up so high that most of the companies that had firm price contracts have had to go in and renegotiate these contracts to assure that they got the coal. All the contracts that you look at have escalation. They all attempt

to stay at market price, but I think that this one does better than those others. It has a redeterminer every three years on it that opens it up to market price and you don't have all these escalations occurring on the profit and so forth in the term between those times. The contract we looked at from all of them have escalators tied to their labor. The only one we had looking at the same time we had this Sun contract was the contract from Decker which had a very undesirable feature in escalation in it in that you pay the escalation on the basis of their increased labor cost. You pay on their material cost and all of these items. Some of them were on indexes and some of them were direct like the labor for example. One of the things they had in their contract that this one is much superior to is that their profit escalated on the basis of their labor and they are in control of what they pay the labor. I can see that their labor union would think that that would be a fantastic thing. If they double the wages they double the profit was the way that contract was presented to us. We asked Decker how they could present a contract that was so one sided to us, and I think they told us the thing that is quite important to keep in mind also is it's extremely difficult to get a coal contract. They say there are people that will sign this contract. It may be. I don't think that we have those problems with the Sun contract. I think that it's a reliable supply.

Now, as far as the reserves of Sun Oil Company go, we sign the contract for 55.4 million tons of coal from Sun. The reserve figure that you get from the U. S. Department of Bureau of Mines leased to them has been confirmed by the John T. Boyd Co. is, there's 525 million tons of coal there. Almost some ten times as much reserve as what San Antonio requires.

As far as the railroad goes, it's in a better position than any other coal in that area. I admit most readily that it's a, I say most any other coal in that area, is very close to the end of the existing line. It's about six miles South of the line that goes into the Amax mine, which is operational. We asked Amax for a bid, incidentally, and didn't get one. They said they didn't have any coal to sell. This proximity to that railroad is a big plus for getting the coal here. The Sun has agreed to install that if the railroad would not install it, but the railroad will install it and they have plans to do so now. As far as getting someone to haul it, there's no question that a railroad will haul it. The ICC is set up to protect and we know that Burlington Northern will haul this coal. It's just the question of how much will they charge to haul it. The rate that they first gave us was considerably cheaper. It was $7.90 when they were talking to us at first. When we got the contract, they set the rates at $11.09. We presently now are in negotiation with them and of course, the ICC is the final authority on setting that rate. There's no question that they will haul the coal.

Now, the condition of the tracks from Fort Worth on down into San Antonio, I talked to SP about it considerably. They feel that their tracks are in excellent shape. The Southern Pacific and most other railroads feel that the SP is pretty much of a Cadillac railroad as far as the condition of the tracks. The SP says that if I wanted, an example was that when they haul in these two million turbines to San Antonio or a large equipment that cost several million dollars, they hauled it in by rail and it didn't take any extra insurance. They're not in the business, of course, of losing something that cost many millions of dollars. The rate that they've given us, the latest rates of course, I have some money in there for rebuilding the Burlington Northern track. Of course, that's one of the things that I think we've got to look at very carefully to determine what is a reasonable rate for hauling that coal and what is going to be the cost for rebuilding that railroad. We have, I think, some of the best experts in the world working on it. We have a man named John Nowicki, who is a coal transportation consultant. He has with him a man, Peabody

and Associates out of Washington who are quite extremely confident in that field and have a great reputation for being able to bring the railraods and understand their problems. In fact some of the people working for him are past district superintendents who were brought in from Northern Railraod. So, I think that as far as those items go, we're in good shape.

As far as the reserve itself in getting the mine started, we realize when we went into the contract we couldn't get anybody to bid a coal contract with us. Decker started in 1978. The Sun contract, they are going to attempt and feel like now they would be able to make some deliveries in late 1976. They have contracted to begin deliveries in March of 77, but they feel like they can make some before. The unit out there that's being built, those units are both coal and fuel oil fired. If we get the unit on our line in November or December without coal, then we'll have to fire on oil until we get the coal, but we're still shooting at a contract that's more than a year in advance than any other offers that we've had or alternatives that we've had.

DR. SAN MARTIN: Has the CPS authorized a study of the reserves on your own, have you authorized your own or are you depending strictly on Federal reports?

MR. VON ROSENBERG: No, we hired the John T. Boyd Company who are mining and consulting engineers. They were recommended to us by Texas Utilities Company as they had used them previously. They have done a study of the reserves of the Sun.

DR. SAN MARTIN: Are you going to rely just on one study of the reserves?

MR. VON ROSENBERG: We have the figures. Of course under Federal code, the government does a lot of work as to how much coal they think they've got there. I think the government figures like 550 million tons, our own number from Boyd is 525. We have those two backups that the coal is there.

DR. SAN MARTIN: But when it comes to a shortage of anything, the Commission, Federal Power Commission, would wash its hands of anything. The Railroad Commission would wash its hand and we're going to have to have our own figures. To me it looks like one study might not be sufficient because these commissions, I don't have any faith in Federal Power Commission or Texas Railroad Commission. These are for the birds. They have proved, they have said so themselves. The Federal Power Commission has said that their hands are tied. There's nothing they can do. So, if the time comes when the reserves aren't there, then we're on our own again.

MR. VON ROSENBERG: Well, I think you are, I think one thing has to be pointed out here is there's quite a difference between determining what a gas reserve is. That happened to be my past background on what, determining what is there. If you look at a gas reserve, you're talking about drilling a hole down there in the ground and you check for frosting, permeability and these type of things and you make calculations on very little data. They represent the cord that you got, really represents that one little spot. This is true with coal also, but normally coal is laid down differently and these beds that we're talking about up here are about 40 to 50 feet thick under the surface. They drill something like 139 or 40 test holes that we got from John T. Boyd Company, that shows that you go down about 40 or 50 feet of coal and, of course, this is the same type of, it ties in to the information that the government has done on the hole itself. We're talking about 55 million tons out of 525 million tons. It's not the question of going out and acquiring more coal to meet this contract. The coal that you're contracted for is under the belief that represents that they would come up with the same finding. If there is more than 55 million tons of coal in that reserve, I don't think there's any question about it.

DR. SAN MARTIN: Let me ask you on the terms of the proposed contract, you said that you can open it every three years.

MR. VON ROSENBERG: Yes.

DR. SAN MARTIN: Suppose that at the end of three years the Sun Oil Company or whoever holds the contract says, I'm sorry but we don't want to renew this contract, what are your....

MR. VON ROSENBERG: Well, it's not open to that extent. It's only opened for a price redetermination. In other words, the contract at the end of every three years, actually it starts the first time in January 1979. If they are able to sell this coal at a higher price then they say we would like to adjust the price of this coal up and is based on these contracts, similar contracts in the Wyoming area, that is going for this price. Let's say that we are paying $5 a ton for it, and they come along and say in 1979 we got an offer to pay $6 a ton for that coal. Well at that point of time you have to decide whether you want to pay 75 per cent of the difference which would be $5.75 a ton which would still put you somewhat under the market price but closer to it. Or you may choose to cancel the contract if you had coal available to you or other energy sources available to you at a cheaper cost. In that case you continue this contract for two more years to give them a chance to shut down their operation if that's what they're going to do or give you the chance to get your operation going with another supplier. I think that's a great plus on this contract, I think for us. If the price of coal does go to $40 or $50 a ton and gets out of line with the price of oil and oil is available and these units can fire oil. I think it gives us a plus there and the others don't. The other thing is that it works the other way. There's a very limited opening of area up there to mine. That's why there's an environmental question about opening strip mines all over the West. There is tremendous, immense quantities of coal in that area. If you, so they're reluctant to issue more, the federal government is reluctant to let out more of these leases. If they were to decide to open up a great number of these leases at one time, I think the price of coal could go down. If the price of coal does go down then it also works in reverse. It goes down 75 per cent of the way if we can find coal from another source.

MAYOR BECKER: I'm going to ask that the contract be reviewed by the Legal Department of the City with a report to be issued to the City Council as to the exact provisions of that contract. So if we already aren't in possession of a copy of, Arthur, I would appreciate it if we could have a copy placed in our hands.

One of the things, of course, that concerns me with regard to the cost of the coal, the cost of capital investment of the coal plant, the cost of the fuel that we're burning, that transportation cost must be involved in that calculation. Also all those states in that area are beginning to pass to their own state legislative bodies taxes because this is a non-recurring, it's a diminishing asset to that state and some of the taxes seem to be coming out in nature of something like 50 per cent of the price of the product or therabouts. I think North Dakota recently passed one that was rather onerous. So those factors have to be taken into the equation, of course, as you well know. It would be my own interest at least that we pursue as rapidly and as diligently and as energetically as possible the exploration or the possibilities of utilizing as much Texas lignite as we possibly could even though we realize that there's an additional capital outlay brought about by the necessity of the scrubbers in order to clean up the air, so to speak. The exhaust or whatever you care to call it. Now in the long run and I'm sure you've given this a lot of thought, does the additional capital outlay in the use of the scrubbers perhaps could it possibily offset the transportation cost which will be an ever increasing thing? I don't think that we can ever look at anything to come down again not at least in our lifetime perhaps. The possibility of ever increasing taxes levied by some of these various states that this product is coming from whether it be Montana, the Dakotas, or Wyoming or wherever, and see perhaps if it wouldn't be more economically feasible to concentrate on the use of Texas lignite and rely on that to a greater

degree than we are this coal contract, for example in Wyoming, and these things must be pursued. They must be considered.

MR. VON ROSENBERG: May I answer that?

MAYOR BECKER: Yes.

MR. VON ROSENBERG: I'd like to explain, I think one thing, we look at lignite, if available to be a better alternative than coal even with the higher capital cost or base loaded type (inaudible). There's no question about it. If we can get lignite and build our own plant close to San Antonio, we are way ahead of the game. We had done a considerable amount of work looking for lignite in the State of Texas. We have hired Southwest Research, we hired John T. Boyd to look for some. Southwest Research is continuing to look for lignite for us.

A lot of the reports that you've seen like one of the government reports from the Bureau of Economic Geology points out that there is tremendous amounts of lignite in the State of Texas. Some of these most promising areas we've gone in and actually drilled holes in to determine what is the potential for lignite and coal. One of the good examples, I think, is down in Maverick County where they say there is a high quality bituminous coal. We got on to a 17,000 acre ranch down there and drilled a number of test holes and found that this really wasn't true. This coal is there but it is very poor quality. It looks like better coal than it is, but Southwest Research testing of it found that it contained a lot of shale. I think others are finding a similar thing. There is a considerable amount of lignite in Texas. Unfortunately I think the majority of it for us unfortunately, has been tied up by Texas Utilities. It's a higher quality and better grade. The stuff up in East Texas and ranging along there has been tied up by them. There is some lignite in the area where we had our small amount of lignite, and when I say small amount 15 to 20 million tons of lignite which has a much lower heating value than even this sub-bituminous coal - that comes from the West is not an ample supply for a justification of a unit. Like I say, we're hopeful that we can get that one in there. Now why didn't we burn some lignite in this 76 plant? I'd like to answer that a little bit. Number one, I think there's quite a debate, and if you ever read any periodicals you'll find that there's no agreement that a scrubber has been developed or will be developed that will be environmentally acceptable and operationally acceptable.

There is quite an argument, heated argument going on between EPA. The EPA saying that the scrubbers are available to technology. The Federal Power Commission, the Tennessee Valley Authority, saying that they're not available, it won't be available. But we, you can buy them. I'll say you can buy one but whether it's available..... (inaudible)..... Now if you looked at if for installation on our plant that's 14 miles southeast of town there, we would put in something that would not be acceptable environmentally and we might violate the air quality standards and we'd have to shut that plant down. It's too important to our energy plans to have a realiable source. One of the good things, I think, about the Sun contract is that we can continually look for lignite. If we find lignite, these boilers have been designed to fire lignite. They would have to be somewhat less capacity to start with and we'd have to change maybe the grinders on them, but they can be adapted readily to fire lignite. We bought the big boilers for lignite. If we find it later on, we can burn lignite in those boilers. The lead time is the other thing on lignite. Texas Utilities thinks starting right now, it would be extremely difficult to start a lignite plant. In 1980 they'll get one for us going in 1980. They're in the mining business. They have their own mining equipment and operating a mine very close to us. Our best chances for getting one is with them, rather than with someone else who would have to order the equipment and come into that area and hire some people to start and operate a mine.

DR. SAN MARTIN: Arthur, let me ask you something. Sometime back a group of local citizens here presented a proposal to this Council which I personally don't feel you went into it very thoroughly. I got a one page report from the proposal of Basic Industries which didn't say very much, and I wonder was it a policy decision Tom or was it a management decision that this particular proposal not be studied adequately?

MR. DEELY: No, Doctor, it was not. We took the information that was presented. I believe it was Mr. Bacon that was the gentleman that was pushing this project along with former Mayor McAllister, Mr. De La Garza. In any event about three or four of the Board members together with Mr. Bacon came and made a presentation to our engineers. They went into this at great lenghts. There are a number of processes, of course, for gasification. The one process that they settled on, we went to the people who manufactured the equipment in the United States for that process. Our engineers studied it at length. I think I might ask Mr. Von Rosenberg, who was also involved in the evaluation of that process, and what was possible. There are a number of fundamental problems that may be insurmountable insofar as this project is concerned. I think I'll ask Mr. Von Rosenberg to tell you about the evaluation on that.

MR. VON ROSENBERG: I think most of the problems can be worked out. The big problem that we had is that we were talking about a tremendous amount of coal that had to be found and shipped into San Antonio to be gasified. Well, it gets back to Mayor Becker's insight there as to hauling this coal into San Antonio. Where are you going to find at one time, at the time we were talking to them we were also looking for a coal contract and we were having a difficult time finding the fiddling amount we needed. When I say fiddling amount, 55 million tons of Wyoming coal. Mr. Bacon was talking about finding not just 55 million tons but 20 billion tons of this coal and if you start talking about hauling in that by railroad, I just frankly don't think that's a real practical thing. In the first place, two-thirds of the cost of the coal product itself is transportation. We're paying $5 per ton of coal; we're paying $11 to ship it, which I think worries Mayor Becker. If you start talking about going and buying coal and shipping it in here to gasify, I don't think you're in a competitive position with the man that might gasify that coal on sight and I don't think that we had enough information shown to us that they could - well, I saw none, I heard that they could get the coal but I never saw any backing up of that that they had the coal and had a way of getting the coal in here to put that operation together. I had some people that had worked closer on this than I have, but that personally was my biggest hangup with that the idea of gasifying coal in San Antonio is that coal is not here in San Antonio, the gasifying and the volumes that they're talking about.

DR. SAN MARTIN: You're talking about transportation, when you speak about transportation, Arthur, and Texas, the farthest distance you can go from San Antonio to the Panhandle probably would be 600 miles If you go to Wyoming and that's what, 1500, 1800?

MR. VON ROSENBERG: **There is no, you can't get 20 billion tons of coal in Texas.**

DR. SAN MARTIN: Well, I'm not talking about 20 billion tons. I'm talking about enough to supply the plant that was proposed which would probably generate a third or 40 per cent of the need. I mean, what I'm asking is, did your staff really go into it to the point where this plant might be feasible for San Antonio? It is feasible in other parts of the world. I want to know what makes it unfeasible in Texas.

MR. VON ROSENBERG: Well, what makes it unfeasible in Texas, the gas pipe I think is, if you're talking about the gasification, I think it's the fact that the coal in the amounts that we're talking about is not here and you have to transport it a long distance to get it here. If you're talking about using gasification for the unit itself, it's less sufficient. If you're talking about, if you haul coal to San Antonio the most sufficient way you can use that coal in the boiler is to burn it directly. Anything you do to that coal to decrease its, it reduces the efficiency of burning it directly.

DR. SAN MARTIN: Mr. Mayor, may I ask Mr. Frank Leach to bring the Council up to date on the results of a meeting that we had here, I believe on Monday, with two representatives of the EPA. Would you bring the Council up to date on this proposal that was submitted exactly on this? How many proposals did we discuss with those gentlemen?

MR. FRANK LEACH: I'll restrict myself just to the EPA applications and I don't know anything about coal gasification, so I won't discuss it.

DR. SAN MARTIN: This is pertinent to the discussion.

MR. LEACH: About a month ago, Congress passed and the President signed an extension of Economic Development Administration Legislation for two years, and San Antonio immediately became eligible for funds and which we have not been able to receive for a year. Two days after the President signed the bill I took a list of things that over the past year and a half people in San Antonio have asked to have funded. They selected out of that very long list four projects and came to San Antonio to hear presentations on those four possibly fundable projects.

One of these projects they listened to, and one in which they showed a great deal of interest and continue to do so, is the feasibility study on adapting a coal gasification process to San Antonio specifically. They don't want to discuss building a hundred plants or a billion plants; the feasibility of doing one plant in San Antonio. The feasibility studies would take, there would be, I think, three basic studies which they feel that they can fund. One would be the adaptibility of the coal gasification processes to San Antonio itself. It's strictly engineering study. The second study which would go along at the same time would be melted in, would be a fuel availability study in which they would examine the different types of fuel that can go into gasification. Not only coal. The third one would be examination of, number one, the enviromental impact and along with that the economic impact with respect to the secondary industries which are created by coal gasification such as the possibility of producing fertilizers for South Texas and things like that. Now, today following the meetings that we had last week and they called us back and discussed this and they said we're extremely interested in this problem because since these guys live in Austin also, even though they are Feds, they're pretty much aware of their local problems and they seem to feel that gasification might have some adaptibility here. They are anxious to proceed with the application process, and that's where we stand.

DR. SAN MARTIN: In case the application were approved for this study, Frank, would you contemplate they would fund part of the feasibility study or.....

MR. LEACH: They have two programs sir. One would be, they would fund the study one hundred per cent with their funds. They would do it through the City or a non-profit corporation. They would not fund a profit corporation. But they would do it through the City. Feeling that, then they would do it under what they call a Technical Assistance Grant to the City in which case the City would put up 25 per cent and they would pay 75 per cent. Now all three studies would cost, one would cost $65,000 and that is the Engineering Adaptibility Study; the second one on the Fuel Supply because there's been some work done in the past which costs approximately $20,000 to $25,000. The third one would cost about $25,000. So I think that total, we're talking about $115,000.

DR. SAN MARTIN: Mr. Berg, Tom, is there anyway that the Board of Trustees could become involved in this particular aspect of this project so that in case they.....

MR. BERG: I'm sorry, I didn't hear that.

DR. SAN MARTIN: Is there any way that the Board of Trustees could join the City of San Antonio in working this feasibility study even CPS has to pay a share of that feasibility?

MR. BERG: We're interested in anything that will bring down the cost of fuels and energy. We're interested in joining with anybody that's got an idea. We'll cooperate to the fullest. I would like to give my own personal opinion on what I've heard, in addition to what I know from my readings and studies and discussions with other people in the industry. A lot is just like, you know, family. You don't believe anybody in your family when they tell you something, but a stranger from out of town comes in and he tells you something, and boy, you believe every word. I think the same is appropriate here. This sounds to me like another great way for the taxpayers that have to spend a lot of money to make another feasibility study to be put away to be added to I don't know how many studies that have been on exactly the same question. I don't know who these people in Austin are except that they work for the Federal Government.

Their job is to spend the money that has been appropriated, that's their job. Their job is not to determine whether or not this is really right or wrong. They've got a budget and they're going to spend it. I think the whole thing is just an utter waste of your money as taxpayers. It ought to be abandoned because we have studies this thing to death, and all we're going to do is add another $150,000 to add some more papers to already existing documents of which the manufacturers, for example Cochran Company is typical of one of the outstanding manufacturers of this type of equipment, and they say it just won't work. It isn't right. It's not economically feasible. Now to pressure something into existence is not the way to do it.

MAYOR BECKER: Tom, if I may interject, I think what you mean by when you say it just won't work, it's not applicable to this part of the country.

MR. BERG: I'm talking to San Antonio.....

MAYOR BECKER: In Europe it works well.

MR. BERG: Oh, yes and it will probably work well in Pittsburgh. It will work well in Pittsburgh, and it will work well in Scranton where they run on top of a coal pile. I'm talking San Antonio, Bexar County. I'm not talking about the process. Let's talk about burning garbage. General Electric in Lynn, Massachusetts had to make a contract with 19 communities to get enough garbage to get 30,000 kilowatts of electricity. Thirty thousand, that's about equal to what our boiler feed pumps would use. They had to get 19 communities. So, we're talking about the economics of what we have here only. I'm not talking about the process.

DR. SAN MARTIN: Does the plant have to be located on West Commerce or East Commerce? Can it be located where the source of coal is?

MR. BERG: Well, as Arthur Von Rosenberg indicated the coal to do this exists a long ways away. As you know, and I've expressed many times, expressed here this morning by you all, really it's only under desperation that you want to haul coal 1500 miles. It doesn't make much sense, of course. But as the interim solution, we had to do this and I think it's the right decision. We're not going to build anymore than these first two coal plants. We'll then go to lignite and other fuels. So, for San Antonio to bring additional coal to go into the gasification process and to bring the coal from where it exists, where does it exist? A thousand miles, 1,100 miles, 1,500 miles, but it's a long ways away. Anything from a thousand miles up.

DR. SAN MARTIN: We're talking about Texas lignite.

MR. BERG: Pardon me.

DR. SAN MARTIN: Texas lignite.

MR. BERG: There's no point in gasifying lignite. Oh no, you'd never gasify lignite. It's so cheap and inefficient, you just couldn't afford to spend any money on it.

DR. SAN MARTIN: I'm not talking about gasification only. Could you use Texas lignite in your coal firing plants?

MR. BERG: Oh yes, as Arthur Von Rosenberg indicated, our coal plants are suitable for firing lignite. Yes, they'll fire lignite, oil, and coal.

DR. SAN MARTIN: But somebody else beat us to it.

MR. BERG: Pardon me.

DR. SAN MARTIN: But somebody beat us to that high quality lignite already.

MR. BERG: Oh yes, from my understanding from people that twenty years ago or so Texas Utilities went out and bought out leases and they have been doing this for many, many years. Yes, no question about that. Of course, nobody ever thought we would ever run out of gas either.

DR. SAN MARTIN: Well, I just don't feel that this project has been given the kind of consideration and I certainly feel....

MR. BERG: I respect your opinion.

DR. SAN MARTIN: Well, there's someone here in the audience who might want to address himself to your remarks.

MR. BERG: Very good. I respect your opinion and I'm sure you respect my opinion and it's a matter of judgment and investigation of this. You asked my opinion and I feel that I have expressed it for this City perfectly candidly.

DR. SAN MARTIN: Mr. Mayor may I ask the gentleman there to address himself to the answer of Mr. Berg that it will not work in Texas for San Antonio.

MR. BERG: I didn't say it wouldn't work. I said it's not economical.

MR. JOHN FLETCHER: Mr. Mayor and Council and ladies, my name is John Fletcher and I'm consulting for ....(inaudible)...of this project. The information based on world wide experience with the gasification process leads to a conclusion that virtually any hydrocarbon that has a high enough BTU value can be used in the gasification process. This would include either liquid hydrocarbons or low grade or high grade solid fuels. There is no question that the gasification of lignite is feasible and is, in fact, in process in Turkey at the present time. So the justification is as Mr. Berg says, on the cost of gasifying Texas lignite or fuel which can be transported sufficiently, economically to the plant site. This seems no doubt at all that the supply of lignite, even of low grade lignite, is adequate in this state, and therefore, the question of the economics of it is based on the tonages available, the locations available, and the efficiency operating with the KT process. Just this topic that is the second study which was has been mentioned by Mr. Leach a few minutes ago. So in summary, technically there's no doubt about the process being capable and economically it's based on the geographical position and availability of supplies of lignite. If there are any questions, I would be happy to try and fill them.

DR. SAN MARTIN: I don't have any further questions of Mr. Fletcher unless Mr. Munguia or Mr. Mora have anything else to add, but I feel that this City Council just to be sure that history will show that we went on record in trying to explore any possibility of any source of energy for San Antonio. If this funding is made available, I think the City of San Antonio should undertake this particular study. Mr. Mayor, I don't want to belabor the point at this time, but I feel we should at least make that information available to us.

MAYOR BECKER: All right sir. Arthur to get back to the matter of lignite, you know, many of our journalists in the EPA have made lignite seem to be almost as undesirable as sewage for the utilization in the creation of energy. Most of the industrial might of Europe, particularly in East Germany, in what's known as East Germany now and West Germany, most of it was founded upon the use of lignite coal. I don't think anyone has to tell us what the Rural Valley is in the scheme of things in the world today, industrially speaking. Now, all I can report is what I'm told. This is one reason why we've engaged, as an assist to the work that the firm of O'Brien and Gere is already doing for us, we've asked them to also engage in the search for fuel whether it be coal-deposits of lignite. I'm told that there's a lignite deposit across the border in West Texas in New Mexico. I don't know this to be a fact. I'm told this. That it's about 20 miles from the state line, that separates New Mexico and Texas. An abundance of, in theory, at least, an abundance of lignite in this deposit. It could be transported the 20 miles by rail car, let's say, if it were there. Then put into a slurry pipeline and transported the rest of the way to San Antonio. I appreciate the cost of right-of-ways and all those things, but after all we're dealing with something here that, I don't have to remind you, that goes out into the future, ten, twenty, thirty, forty, fifty years, perhaps. So initial investment in a pipeline, where it's economically feasible and desirable wouldn't be something that would be insurmountable. One of the gentlemen, in one of the large transmission companies in Houston discussed slurry pipeline feasibility with Mr. Berg and myself one day. His concern was quite specific in the matter of these coal trains traversing the State of Texas on these road beds we have down here. The road beds not necessarily a product of the railroads but more of the type of soil that the track has to be laid over, the humus and the bentoxite and all of the different types of swelling andheaving and pitching and the lateral movements and everything else that we encounter in Texas soil. I don't know whether you all have in any way discussed that deposit of lignite that's across the state line. I'm also told that there's a deposit of anthracite, if I'm not mistaken, anthracite coal in Tennessee. That's almost, as I was told, transportable by barge. The deposit is close to one of the principle rivers and I don't know whether it's the Mississippi or one of the other rivers, but it's almost transportable by barge to whatever would be the closest point say on the Mississippi River, and then transported to San Antonio by rail car. I just wonder, you know, if we absolutely gone to every extent that we possibly can and I know that's a big question, but if we're continuing constantly to try and inquire and attempt to locate some other sources that would be more desirable, more usable, more feasible economically speaking, then all the way up to Wyoming, you know. I have nothing against Wyoming. I was born in Wyoming. But it's just a heck of a long way from here.

MR. VON ROSENBERG: That was our, has been our primary concern and like I said we sent out requests for quotations to 85 potential suppliers of coal and discussed it with everyone that showed an interest or anything. We've looked at high grade coal in Alabama for example. It might be brought over by barge. Barge transportation is about half of what railroad transportation use to be, and it looks like it might even be less than half now. We also looked at quite hard at New Mexico coal and talked to several of the people who had holdings of New Mexico coal and got excited with some of them and they dropped out. Coal in New Mexico that we looked at, some of it is very close to the State of Texas, was graded a little higher when they talked to us about it than lignite. It was sub-bituminous coal, low BTU. Essentially, it is a dirty coal. It's not real suitable for washing. If it were, you could wash it and get the BTU up, get the impurities out of it, get the BTU up, and it would be a considerably better source of coal for San Antonio than hauling it from Wyoming because of the railroad business. Unfortunately, you take for example Amarillo, Southwestern Public Service in Amarillo, puts in a coal plant. They look at New Mexico real hard too and they're just a stones throw from New Mexico. They couldn't get a competitive bid out of New Mexico for that coal. They are buying their coal from Atlantic Richfield up in Wyoming because the cost of it was just cheaper even including the railroad costs. We talked to several companies in New Mexico. One of them was going to acquire some property and buy it from others. They talked to us which is a very large mining operation company, one of the largest in the United States, Peabody Coal, did make a proposal originally to us out of New Mexico. The last time they came in they said, it's kind of interesting I thought, that they said it was extremely high. They'd gone up on the price of it at the mine after we had already signed this contract; they came back and said they had some to sell us out there now. The price of it was going to be high and it was very poor quality. That was their words. They said that's what the market is right now. Of course, anthracite or those higher quality coals are primarily used or they could be exported for steel purposes and so forth and they get...inaudible...I think you're talking about paying as high as, some us going as high as $50 or $60 a ton. It's not that you couldn't burn it in a boiler, it's just that you can't afford to burn it in a boiler. I would like to say that we are continuing to look, Southwest Research is still working with us, looking for lignite.

Another thing I'd like to bring out there is the scrubber possibility. You take the plant, for example, in Austin the LCR is building in Fayette County. There is a lignite reserve in Fayette County. It's right where the plant is, but they don't plan to use it for the first few units because of the scrubbers, the air quality. They are trying very desperately to get a coal contract, a western coal to be used in the first unit. The first unit they would... inaudible...in '78, 77-78 period. They are trying to get a coal contract out of, well they are talking about Montana right now. You talk about taxes, Montana is a good one to slap them on. Wyoming has had a better viewpoint on taxes. We've contacted attorneys in both Montana and Wyoming who work in the state capitols who have a fair, we thought it might be a fair chance of finding out what they thought the taxes would do. Of course, we can look up what they are now. We have escalated the taxes up and when considering the Sun proposal from Wyoming against the Montana proposal, we immediately adjusted taxes in Wyoming to equal Montana, because we felt that if they see that it's a good thing for them, they are going to do it here and then increase those taxes throughout the evaluation on an even basis.

MAYOR BECKER: Of course you know I read where the Federal government, Congress and everything is taking another look at the EPA standards of, for example, the creation of energy and whether or not they are realistic or unrealistic. Fortunately, I've been to Bonn, and Cologne, and Dusseldorf and Munich and many of those areas in Germany and I survived it. I'm here today. They didn't kill me off

with the fumes and all this sort of thing, even though of the high industrial capacity of Germany. I think it's like anything else. There's been over reaction and now then it will probably swing back and finally rest somewhere in the middle which would, if that would be the case, would make the use of lignite certainly more feasible than it is right at this moment. I just hope that you continue to explore with every means that you have in your quest for this fuel.

MR. VON ROSENBERG: Yes, we're continuing to explore. I think one of the things that you have to keep in mind when you talk about the immense quantities of lignite that are available in Texas, is of course, the economics of getting it out of the ground and how deep is it. Some of these reserve figures you look at are up to 2,000 feet. Well, you don't strip 2,000 feet and get lignite. I personally, and I understand the University of Texas is getting a project funded up in the Bastrop area for what they call...inaudible.. or gasification.

MAYOR BECKER: I'm sorry I didn't understand that.

MR. VON ROSENBERG: They actually gasify it in place so you don't have to strip all the country off to get it. I personally hope that's successful. Of course, it shows a lot of potential for removing the deep seated lignite out of the ground and much of lignite is very deep. When you're talking about mining lignite in the State of Texas, now, the economics of the situation and the fact that there's a big drag line and so forth and a big shovel about the limits of their operation is about 150 feet. Until recently it was 120 feet. They added 30 feet on because of the higher price you can pay for lignite. I think that has to be kept in mind and when we talk about, our report shows you that there are billions of tons of lignite available. At what depth? How are you going to mine it? There is lignite in Texas and we drilled in, like I said a lot of holes and Southwest Research has drilled many, many hundred of holes all over the State of Texas. We've had access to all of the data. When you look at them they are thin beds and they are ventricular, a lot of them are ventricular. In other words they are covered with a little small area here and then they pop up again over here. These thin beds have partings and those partings are something you've got to get out when you go into, in many cases, you get five feet of just pure dirt in between one bed and another bed. It doesn't make them acceptable to deep mining because the beds are too thin. So, I think those things have to be considered and my own opinion is that the first step to, we've got a lot of data, I think, or had access to a lot of data about lignite and the potential of lignite in Texas. I don't really want to debate that pass situation about the gasification. I think, like I said, if we get it at a cheaper cost, that's great. I question whether the large amounts of lignite are available economically and whether the, and I think from the study that we've done, that you can't find these big pockets of lignite.

MAYOR BECKER: of course, you know, we have to bear in mind though one thing I think, and that is who would ever think that we'd be drilling, I think they drilled one the other day, what was it, 31,000 foot well trying to find a gas deposit.

MR. VON ROSENBERG: For the price they're getting for it now, they can probably drill to the center of the earth.

MAYOR BECKER: It pays you know, but most gas wells were probably what, in old days, 3,000 feet or something like that. Now, they're down to 31,000. What would a well like that cost? Probably four or five million dollars if they ran into any kind of hard stuff.

MR. VON ROSENBERG: I would say it cost more than that.

MAYOR BECKER: So, you know....Lila?

MRS. COCKRELL: I wanted to just register one little word for environmental concern on some of this. I know we're just really pressed for increasing our energy supplies, but I think on the lignite in particular unless we get a scrubber that will work, I would have to express the concern. San Antonio, I think, the layout it is peculiarly susceptible to air pollution, particularly in the Downtown area. If these plants are on the Southside of town and our prevailing breeze is usually from the South, isn't that correct, the Southeast, and then Downtown is almost like a bowl, and then as you go North particularly, the elevation raises. I know the other day when we had that Northern come in for a few hours, the Northern had chased out all of the pollution and everything in the atmosphere and the sky was so blue. It was just beautiful. I happened to be over on the Southside and just in the few hours it was coming back and I looked and already the haze, the pollution was back in the picture. I think we don't realize we get use to living with some amount of pollution although we're here in a place where we like to think of the wide open spaces and the beautiful blue sky. It's only when you see the sky really blue that you realize that it's not blue most of the time.

MR. VON ROSENBERG: We do consider that and of course the reason for the high stack you see going up over at that plant which would be 700 feet high, the reason for that real high plant is to disperse and get that thing over this, so it all doesn't fall in the Downtown area, anything that does come out of it. Of course, that plant does, with the coal that we have now, it's clean. It's not as clean as nuclear. It does have some particular matter that will get out, but we're putting in...inaudible...and I think particular matter will have hurt you more there than what the sulfur would. This particular matter, we have precipitators in that will remove up in the 99, higher than 99 to 99.7 or 99.2 per cent, I believe, don't hold me to the numbers, but in the high 99 per cent of that particular matter. There's been a great development in precipitators.

MAYOR BECKER: I doubt really though, Lila, the topography in San Antonio is enough like Denver for example. It's in bad shape because it's in a bowl and the air is trapped almost. Los Angeles is another one of course, we all know about that. I'd like to see the sky around here remain just as blue as the color of my eyes, you know, except when they're red and sometimes they do attain that coloration. But I share your concern in not polluting the air. I'd like to live here and enjoy it also. Glenn, did you have something that you wanted to say?

MR. LACY: No sir, I think you've about said it all.

MRS. COCKRELL: I do want to ask one other question. One of the points you mentioned was, of course, looking into the future any possibilities of geothermal, and I got real interested in this when my husband and I went to Iceland a year ago on a reunion of his World War II group, but are there any substantial thermal deposits that can be used?

MR. VON ROSENBERG: The guidelines on geothermal that the government reports that have been funded, I guess, have said that you need to get about 400 degrees from less than 10,000 feet. To do that you need variant of about four degrees in that range per foot as 100 feet as you go down. San Antonio, really we've looked at, Southwest Research has also done some work for us on it. It looks like to reach that kind of temperature, we would have to get down about 16,000 feet. So under those guidelines, it doesn't appear to be a practical alternative to us now. We found out in the far West in California and so forth, where they have the geysers, that's where most of the work is being done in the far West. You get this temperature at less than, well out there it's almost at the surface, but it is at surface, but you need to find it at much higher depths than what we have around San Antonio. I think that's something that we have to keep looking at.

MRS. COCKRELL: I just think about Hot Wells, you know...

MR. VON ROSENBERG: We even looked at that one and I have something there on it.

MAYOR BECKER: Gee, there's terrible possibilities sometimes down here in City Hall. Also sometimes over at the Public Service. But it's a short duration, but it wouldn't probably warrant a construction of the plant. Well, if there aren't any further questions, I see that Mr. Centeno had to leave to go count his morning's receipts. They have to get them out of the building because it's dangerous to keep that much cash on hand. So, I'm sorry that he had to leave us prematurely but I don't know whether Mr. Berg is still with us or not. I think he probably excused himself, but Mr. Deely and Tom, and Arthur and everyone, and Jack and everyone from the Public Service, Jerry and certainly everyone, we appreciate your being here this morning to present us with a very concise, informative report. We appreciate your time and courtesy in this matter. Thank you so much, thank you. You will get that coal contract to us?

MR. DEELY: Yes sir, I think there's one over here, but we'll get another one.

MAYOR BECKER: Okay fine, thank you.

74-51 There being no further business, the meeting adjourned at twelve o'clock noon.

* * * *

A P P R O V E D

M A Y O R

Charles L. Becker

ATTEST: J. H. Snellman
City Clerk