UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	§	
	§	
HOUSTON LIGHTING & POWER COMPANY	§	Docket No. 50-466
	§	
(Allens Creek Nuclear Generating Station, Unit 1)	§	
	§	

MOTION TO COMPEL FURTHER ANSWERS

Houston Lighting & Power Company ("Applicant") requests the Board to issue an order as described herein compelling further answers by the Texas Public Interest Research Group ("TexPirg") to certain of Applicant's interrogatories and requiring that all of TexPirg's answers to Applicant's and Staff's interrogatories be resubmitted under oath. As detailed below, there is a serious question whether an individual purporting to respond to discovery on behalf of TexPirg was authorized to do so. No interrogatories responded to were under oath or affirmation as required by 10 CFR § 740(b)(b) and a large number of interrogatories have essentially been ignored. The relief requested and the arguments in support of such relief are set out in detail below.

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I.

Background

A. TexPirg's Answers to Applicant and Staff Interrogatories Were Not Submitted Under Oath

Three sets of TexPirg's answers to interrogatories were not signed under oath or affirmation as required by 10 CFR § 2.740b(b).[1/] As discussed below, TexPirg's failure to submit answers to Applicant and Staff interrogatories under oath or affirmation as required by NRC regulations raises substantial doubt (in addition to the matters described in Part B, below) as to the authorization of Mr. Doherty to sign the interrogatories on behalf of TexPirg as well as to the accuracy and completeness of the statements contained in these responses.

B. Mr. Doherty as TexPirg Officer

On March 13, 1979, Applicant served a notice of deposition on John F. Doherty requesting him to appear on March 26, 1979 for the "taking of a deposition concerning TexPirg's admitted contentions." At the deposition, Mr. Doherty stated under oath that he had been with TexPirg since the end of 1977 and explained his position with TexPirg as follows:

1/ TexPirg's March 27, 1979 answers to Applicant's first interrogatories signed by Mr. Doherty; TexPirg's May 14, 1979 answers to Staff's first interrogatories signed by Mr. Scott and TexPirg's June 6, 1979 answers to Applicant's second interrogatories signed by Mr. Scott.

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"Q. What is your position with Tex PIRG now?

A. I think I'm what they call Acting Research Director.

Q. What does that mean?

A. Pretty much jack of all trades, unfortunately. I handle a lot of phone complaints, work on the intervention.

Q. Work on the intervention for TexPIRG?

A. Uh-huh.

Q. In the Allens Creek proceeding?

A. That's right.

* * *

Q. So far as my question to you today, then do you speak for TexPIRG?

A. (Witness nods head).

Q. Yes?

A. Yes. That's right.

* * *

Q. ...What I'm really trying to tie down now and I guess I do have the answer, and that is that you will speak for TexPIRG?

A. Yes."[2/]

Thus, when asked whether he spoke for TexPirg, Mr. Doherty answered in the affirmative.

2/ Deposition of John F. Doherty, March 26, 1979, pp. 9-11. Mr. Doherty did state that he would relinquish his position of Acting Research Director with TexPirg when Mr. Clarence Johnson, formerly Executive Director of TexPirg, returned from employment in Austin, Texas. Id. at 9-10.

On the next day, March 27, 1979, TexPirg served its answers to Applicant's first interrogatories to TexPirg (Exhibit A hereto). In question G, TexPirg was asked:

> "Provide the names and addresses of all officers and directors of TexPirg."

TexPirg provided the following answer:

> "Acting Research Director - John Doherty; 4438 1/2 Leeland, Houston, Texas 77023 Richard Bost, TexPirg, Rice Memorial Building, Rice Univ. Houston, 77005; Elizabeth Heitman [same address as Bost]

(See Exhibit A, p. 7). Moreover, the interrogatories were signed by Mr. Doherty, as the "Executive Director" of TexPirg. (See Exhibit A, p. 7). Thus, at that date, Mr. Doherty clearly held himself out as the spokesman for TexPirg and also indicated that he had the status of a corporate officer.

In an order issued on May 1, 1979, the Licensing Board ordered that "on or before May 11, 1979, Mr. Doherty shall notify the Board whether or not he has an official position in the Texas Public Interest Research Group." In response to this order, Mr. Doherty addressed a letter to the Board, dated May 10, 1979, in which he advised the Board as follows:

> "As of May 1st, I was a 20 hour per week employee of Texas Public Interest Research Group. My work consisted of 50% of hours on the Allens Creek effort in TexPIRGs behalf, and 50% of hours devoted to the consumer issues that TexPIRG attempts.
>
> "Assuming that by 'official' the Board meant an officer, I am not an officer of TexPIRG. TexPIRG consists of a corporation structure of officers and a board of directors. I do not hold either a post or directorship."

Mr. Doherty signed this letter as "Acting Research Director, TexPirg."

In sum, Mr. Doherty's deposition and his answers to Applicant's first interrogatories to TexPirg indicated quite clearly that Mr. Doherty's position of either "Acting Research Director" or "Executive Director" of TexPirg gave him an official position with TexPirg, which authorized him to speak for the organization. Yet Mr. Doherty disclaimed holding any official position in the May 10 letter. However, he did not state that his status had changed. In addition, on June 6, 1979, TexPirg served its answers to Applicant's second set of interrogatories (Exhibit B hereto). TexPirg's attorney, Mr. Scott (who signed the interrogatories on behalf of TexPirg), stated in response to Interrogatory No. 24(a) that "Mr. Doherty does not work for Tex PIRG anymore and was not authorized [in his March 26 deposition] to say that Tex PIRG was not concerned about chlorine discharges..." (p. 3). In light of both Mr. Doherty's statements in his May 10 letter, and Mr. Scott's statement, which must be construed as applicable to all of Mr. Doherty's representations, it now must be assumed that Mr. Doherty was not authorized to speak for TexPirg at his deposition or to sign TexPirg's answers to Applicant's first interrogatories.

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II.

Deficiencies as to Form

10 CFR § 2.740b(a) provides that interrogatories served on a corporate party shall be answered "by an officer or agent, who shall furnish such information as is available to the party." Section 2.740b(b) provides that interrogatories shall be answered separately and fully in writing under oath or affirmation." TexPirg has failed to comply with both of these sections.

The courts have interpreted Rule 33 of the Federal Rules of Civil Procedure, which is similar to the provisions of § 2.740b, to provide that where interrogatories are served on an adverse party that party may select the officer or agent who is to answer them and verify the answers. See, Moore's Federal Practice, Vol. 4A ¶ 33.07. In this case, there is now a substantial question as to whether Mr. Doherty had the requisite stature of agency to answer interrogatories on behalf of TexPirg. We now have the rather bizarre situation in which Mr. Doherty has signed interrogatories on behalf of TexPirg and stated in a sworn deposition that he was authorized to speak on behalf of TexPirg and the attorney for TexPirg, Mr. Scott, has represented that Mr. Doherty had no authority to answer on behalf of TexPirg.

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Based upon TexPirg's failure to comply with the provisions of 10 CFR § 2.740b(a) and (b), Applicant requests the Board to issue an order requiring TexPirg to resubmit its answers to the Applicant's first and second set of interrogatories, as well as the NRC Staff's first interrogatories to TexPirg, to be signed under oath or affirmation by the person with knowledge of the information contained in each of the answers to said interrogatories and who has been authorized by TexPirg to submit such answers.

III.

Deficiencies as to Substance

In addition to the aforementioned relief, Applicant also requests the Board to issue an order compelling further answers to Applicant's second set of interrogatories. While this portion of the motion relates to Applicant's second set of interrogatories, reference is made throughout to the Applicant's First Interrogatories for background. As will be seen, Applicant attempted to use a second round of interrogatories to obtain specificity in the hope of avoiding the necessity to involve the Board in dealing with these types of problems. Unfortunately, Applicant's efforts have been totally frustrated.

When interrogatories are answered by a person acting as the agent for the corporation, certain general

standards are applicable to judge the adequacy of the answers. First, the answers provided must be "complete, explicit, and responsive" to the interrogatories. Second, the agent answering the interrogatories on behalf of the corporation must obtain and furnish such information which is within the knowledge of the corporation. He cannot merely plead personal ignorance. Finally, if the agent cannot furnish the information requested, he should so state in the response under oath. Moore's Federal Practice, Vol. 4A ¶ 33.26. The following discussion of individual responses to Applicant's interrogatories will show that Mr. Scott, who signed the interrogatories on behalf of TexPirg, wholly failed to comply with these standards.

Interrogatory No. 1. Interrogatory No. A.4a of Applicant's first interrogatories to TexPirg, read as follows:

> "4. TexPirg Contention 1.b. states that 'the cooling lake at South Texas is large enough to accommodate one more unit..."
>
> (a) Describe how the STP cooling lake would "accommodate" a third 1200 MW(e) nuclear unit.

In TexPirg's March 27 answers to these interrogatories, signed by Mr. Doherty, TexPirg's completely nonresponsive answer was as follows:

> "4.A. It would be obviously superior from both an environmental and safety impact."

In Interrogatory No. 1 of its second set of interrogatories to TexPirg, Applicant posed the following interrogatory:

> "In response to Interrogatory A4(a) of Applicant's first interrogatories to TexPirg, TexPirg answered: 'It would be obviously superior from both an environmental and safety impact.' Specify each environmental and safety impact which you considered in answering this question, and specify exactly how much additional water would be consumed in the STP cooling lake by a third 1200 megawatt unit at the STP site."

TexPirg answered as follows:

> "Building Allens Creek at the S. Texas construction site prevents environmental damages to the farm land, fresh water, wildlife, and nearby people and only 1/5th as many people would be exposed to the safety dangers from the plant within the 50 mile radius. The NRC Staff says that 17,700 acre-ft. per year would be saved."

TexPirg's answer is not responsive to the interrogatory. Applicant requests the Board to order TexPirg to answer the interrogatory fully, explaining the exact nature of the damage to farmland, fresh water, wildlife and nearby people. Secondly, TexPirg should be required to specify the alleged safety dangers and how these dangers would be obviated by moving the Allens Creek Unit 1 to the South Texas Project site. In addition, Interrogatory No. 1 requested TexPirg to identify how much additional water it contends would be consumed in the STP cooling lake by addition of a third 1200 megawatt nuclear unit at the STP site. TexPirg answered that 17,700 acre-feet per year would be saved. This is totally non-responsive to the question and TexPirg should be ordered to answer the question that was asked.

Interrogatory No. 2. By way of background, Interrogatory A4(b) of Applicant's first interrogatories to TexPirg inquired into whether TexPirg had any knowledge as to whether Applicant would be able to contract for and receive sufficient water flows from the Colorado River to operate a third unit at South Texas. The interrogatory further stated that if the answer were in the affirmative, TexPirg was to state the source of its information. In response, TexPirg answered "Yes. Environmental Report."[3/] Thus, Interrogatory No. 2 of Applicant's second set of interrogatories was proffered in an attempt to elicit where in the Environmental Report TexPirg had found such information. Interrogatory No. 2 was as follows:

> "Specify the page numbers in the ACNGS Environmental Report or the South Texas Project Environmental Report which show that the Applicant will be able to contract for and receive sufficient water flows from the Colorado River to operate a third unit at STP."

TexPirg's answer to Interrogatory No. 2 of Applicant's second interrogatories was as follows:

> "Page 10.7 of S. Texas ES. Also Houston L&P would not be so dumb as to build a lake that was planned for four units if it did not know that it had enough water for four (not just three) units."

3/ See Exhibit A hereto, p. 1.

There is no page 10.7 in the South Texas Project Environmental Report. Page 10.7 of the FES for the South Texas Project does discuss water usage, but there is absolutely no discussion of water requirements for four units at STP in that portion of the FES. TexPirg should be ordered to either state that it has no such information or to provide the specific information requested.

Interrogatory No. 3. Interrogatory No. A5(b) of Applicant's first interrogatories to TexPirg requested that TexPirg specify the differences in environmental effects which would result from using more land for a 1200 megawatt unit at ACNGS rather than locating a third 1200 megawatt unit at STP. TexPirg answered as follows:

> "Almost 11,000 acres of prime and unique farm land would be lost for no good reason. Such loss would be very significant."

In Interrogatory No. 3 Applicant asked TexPirg to specify the number of acres of both prime and unique farm land located at the ACNGS site and requested that TexPirg provide the source of its answer. While TexPirg did answer as to the soil classifications, it did not provide the source of its answer. Applicant requests that it be ordered to do so now.

Interrogatory No. 5. Applicant's interrogatory was as follows:

"With respect to your answer to Interrogatory A7(b) of Applicant's first interrogatories to TexPirg, state whether you possess any documents or have conducted any studies which show the persons, corporations or other entities in the Houston area will be required to convert to surface water and will use the Brazos River as the source of their surface water."

TexPirg's answer was as follows:

"The Harris-Galveston County Subsidence District requires present users of ground water to convert to surface water. A large amount of Brazos River is already being diverted for use in the Houston area by the Brazos River Authority, i.e. Oyster Creek canal system."

This answer is totally nonresponsive to the interrogatory and TexPirg should be ordered to state whether it possesses any documents or has conducted any studies of the nature described in Interrogatory No. 5.

Interrogatory No. 6. Reconstruction of the questions leading up to this interrogatory provide the Board with one of the best examples of the avoidance of the responsibility to give full, complete and responsive answers. Applicant's Interrogatory No. A8(b) of its first interrogatories to TexPirg was as follows:

"8. TexPirg Contention 1E alleges that 'construction of an additional facility at South Texas would require less use of additional land for transmission lines..."

* * *

"b. What adverse environmental effects do you contend would result from using more land for transmission lines associated with the 1200 megawatt nuclear plant located at ACNGS rather than STP."

TexPirg's answer, signed by Mr. Doherty was as follows:

"8.(a). The FES Supp. says 1041 acres less. (b). Over 1000 acres prime and unique farm land would be lost as located near a large city that will need the land to feed several million people without wasting fuel for transportation from the California farms that are being destroyed by salt deposits. (see FES Supp.)."

Applicant's Interrogatory No. 6, intended as a follow-up interrogatory, was as follows:

"(a) With respect to TexPirg's answer to Interrogatory 8A(b) of Applicant's First Interrogatories to TexPirg specify what crops are grown on the prime and unique farm land that you contend will be lost and specify which of these crops would have to be imported from California if this farm land is preempted by construction of ACNGS. (b) With respect to the prime and unique farm lands referred to in answer to this interrogatory, specify the total number of acres of comparable land in the United States. (c) Also specify whether the 'California farms that are being destroyed by salt deposits' have the same soil classifications as the soil found at the ACNGS site."

TexPirg's answers, as signed by Mr. Scott, are as follows:

"Rice, sorghum, corn, cotton, hay, and other crops that could be grown on the Allens Creek land would have to be transported longer distances (at high freight rates that will increase as energy increases in cost). (B) I don't know and it is not important to the local people. In some other state the local utality [sic] is telling them the lake flooding their land is an insignificant part of the national total because the Allens Creek site will grow their crops. (C) I don't know, but they now grow cotton, rice, etc. that is grown at the Allens Creek site.

Unless this response is intended to be an admission as to TexPirg's total lack of knowledge, this series of questions and answers follow a pattern whereby interrogatories are answered with unresponsive generalities. Requests for further substantiation are met with deprecatory expressions rather than statements of fact. TexPirg should be admonished against a continuance of this course of conduct and should be ordered to either answer the interrogatories with facts or state that TexPirg does not have the requested information.

Interrogatory No. 8. Applicant's Interrogatory No. 8a was as follows:

> "(a) With reference to TexPirg's answer to Interrogatory B7(d) of Applicant's First Interrogatories to TexPirg, specify the levels of heavy metals in 'the Allens Creek discharge, Wallis, Sealy, and plant discharges', specify exactly which heavy metals are in such discharges and their concentration levels."

TexPirg's answer was as follows:

> "They are higher than that of the Brazos River where the Applicant did limited samplling [sic] for heavy metals."

TexPirg's answer contains none of the information clearly requested. Mr. Scott has merely stated that the heavy metal concentrations are higher at those points than at the points where Applicant did take samples in the Brazos River. TexPirg should be required to specify the types and concentrations of heavy metals at the identified discharge points or state that it does not have the requested information.

Interrogatory No. 9. Applicant's Interrogatory No. B8(a) of Applicant's First Interrogatories to TexPirg, related to TexPirg's contention that "thermal shock will kill large numbers of fish during the winter when plant shut-downs occur." The interrogatory asked TexPirg to specify the temperature change required for such thermal shock. TexPirg responded that it "varies depending on the type of fish, rate of change, and prior temperatures as well as other parameters in the fish environment." In an effort to elicit the source of this information, Applicant asked the following Interrogatory No. 9:

> "In response to Interrogatory B8(a) of Applicant's First Interrogatories to TexPirg, TexPirg stated that the temperature change required for thermal shock 'varies depending on the type of fish, rate of change, and prior temperatures as well as other parameters.' Specify the source of that answer."

TexPirg's answer was as follows:

> "Common sense acquired by observation, reading, and page S.5-13 of the Final ES for Allens Creek."

Page S.5-13 of the Allens Creek FES contains no discussion of the tolerance ranges of fish to cold shock. In fact, the SFES contains the statement that the "Staff was unable to find any evidence of cold shock occurring in Texas reservoirs, probably because of the sub-tropical climate and mild winter conditions allowing for more gradual accumulation

of fish populations to lower temperatures." Again, TexPirg should be required to come forth with specific facts available to it, and if it has no such facts, it should so state.

Interrogatory No. 11. Applicant's Interrogatory No. 11 was as follows:

> "(a) Describe the large scale refuse combustion facility being planned by the Gulf Coast Waste Disposal Authority described in TexPirg's answer to Interrogatory D1. of Applicant's First Set of Interrogatories to TexPirg providing the following information: (1) the feed stock (fuel) for the facility; (2) the source of the feed stock; (3) the amount of the feed stock; (4) the amount of the feed stock to be stored on site; (5) the amount of feed stock consumed per day; (6) the facility's total steam yield; (7) the capacity of the project for production of electricity; (8) the cost per kilowatt hour of electricity that would be generated from the plant; (9) the supplemental fuel source, if any, for operating the plant and the cost of producing power from the plant when operating with the alternative fuel source; (10) the amount of power required for processing the feed stock prior to its use for steam generation."

TexPirg's answer was as follows:

> "These details can be obtained from Gulf Coast Waste Disposal Authority and Browning and Ferris Corporation by Applicant easier than from TexPirg."

Applicant's Interrogatory No. 11 was a follow-up to TexPirg's answer to Interrogatory D1 of Applicant's first interrogatories, wherein TexPirg described the Gulf Coast Waste Disposal Authority project and the Browning Ferris Industries project and then stated as follows:

> "Failure to mention these local projects in particular indicate that no conscientious research was done into the possibility of generating electrical power from the combustion of municipal refuse in the Houston area. As the potential for electric power production from refuse is large and may in fact obviate the need for the Allens Creek nuclear facility a complete study of this alternative source of energy should be undertaken."

Thus, TexPirg answered Applicant's first interrogatories by asserting that Applicant has failed to undertake adequate research on a particular topic and then when pressed for details necessary to fully evaluate such an alternative, TexPirg provides no such details, but engages in debate. Accordingly, Applicant requests the Board to order TexPirg to answer Interrogatory No. 11.

Interrogatory No. 16. Applicant's interrogatory was as follows:

> "With respect to TexPirg's answer to Interrogatory No. D7 of Applicant's First Interrogatories to TexPirg, answer the following: (a) On what basis do you calculate that 80% of the refuse collected at two Houston landfills are combustible? (b) How is this refuse 'pretreated'? (c) On what basis do you assert that the combustible refuse collected from two Houston landfills will yield 10,000 Btu per pound? (d) on what basis do you calculate that a refuse combustion electrical power plant will be 40 percent efficient? (e) what is the highest efficiency rating amoung the electric generating plants listed in the reports by the EPA and the National Center for Resource Recovery? Identify the source of your answer. (f) Identify all solid waste electric power generation plants in the operational, design, or planning stage with the capacity equal to or greater than 4,000 tons per day."

TexPirg's answer was as follows:

> "(a) Greg Skie concluded that after studying the matter. (b) Non-combustible materials such as metal are removed. (c) Prior studies. (d) That is a normal average for fossil fuel plants and refuse plants. (e) I don't know. (f) As of 1976, they were listed in our answer to question 5 of contention 5 of the Applicant's First set of Interrogatories. I have no newer information yet."

Parts (a), (b) and (d) clearly sought further details as to prior interrogatory answers by TexPirg in an attempt to examine the feasibility of TexPirg's proposed 4,000 ton per day plant. The answers given are clearly nonresponsive and TexPirg should be required to provide those details at this time.

Interrogatory No. 17. As the Board is aware, TexPirg has raised a contention regarding the failure by the Applicant to take into consideration increases in air traffic in or near the Allens Creek site. Applicant asked the following Interrogatory No. E.4(a) in its First Set of Interrogatories in an effort to elicit the factual basis for the many unfounded allegations which had been raised by TexPirg:

> "Identify the source of the following alleged facts: (a) 'large plane traffic has increased at least 30 percent in the last three years, and (b) will be several hundred percent higher before the plant is closed in about 40 years.' (c) new airports have been proposed to be built in the Fort Bend County area much closer

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than present airports.' (d) 'heavy population density [is] planned for the area east of the plant...' (e) '[airplane crash protection] can be done by roughly doubling the thickness of the containment vessel or still more cheaply by burying the plant for about a five percent increase in cost."

TexPirg's answer to this interrogatory was as follows:

"(a) FAA (b) 30 percent/3 yr. X 40/3 equals 400 percent in 40 years. (c) Houston Chronicle 3/23/79 p. 17. (d) Every one in Houston knows it. (e) NRC Staff and book in U. of Houston."

Applicant's follow-up Interrogatory No. 17 was as follows:

"(a) In your answer to Interrogatory No. E4(a), TexPirg answered 'FAA'. State the name of the person at the FAA who told TexPirg that large plane traffic ... increased at least 30 percent in the last three years. (b) With respect to the answer of E.4(b), state the basis for the assumption that airplane traffic will continue to increase 30 percent every three years for the next 40 years. (c) With respect to the answer to Interrogatory No. E.4(e), provide the name of the person on the NRC Staff who provided this information and provide the name of the book alleged to be in the University of Houston Library."

TexPirg's answer to this interrogatory was as follows:

"I don't know his name, but he seemed to know what he was saying. Also the Houston Post recently indicated that the growth was even more. (b) experience and the fact that all business assumptions of electrical growth, etc. seemed to project upon past fast growth

> in the Houston area. For example a new business airport just opened up in Fort Bend County, and the City of Houston just started planning for a new 'Intercontinental' type airport near the Allens Creek site. (c) I don't know, partly because I don't know what the question was."

This series of interrogatories and answers is set forth in full because it provides additional evidence that TexPirg has not taken its responsibility to answer interrogatories seriously. The answer to Interrogatory No. E4(a) -- "FAA" -- was obviously too general to provide any facts. In response to Interrogatory No. 17(c), Mr. Scott answered that he did not know the answer because he does not know what the question was. Mr. Scott obviously had the question available to him because it was set forth in the Applicant's First Interrogatories to TexPirg. Applicant requests the Board to admonish TexPirg from continuing this type of conduct and to order it to either set forth the information requested or state that it does not have the information. Applicant is entitled to have a clear and concise admission by TexPirg that it has no information to support its allegations if that is in fact true. In any event, TexPirg should be required to answer Interrogatory No. 17(c) by providing the name of the person on the NRC Staff referred to in TexPirg's prior answer and the name of the book alleged to be in the University of Houston Library.

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Interrogatory No. 20. Applicant's interrogatory was as follows:

> "(a) With respect to the answers to Interrogatories Nos. F7 and F8 of Applicant's First Interrogatories to TexPirg, state how TexPirg determined that Dow Chemical, Amoco, Shell, Exxon, Browning-Ferris and Monsanto are planning self-generation of their electricity requirements. If this information was obtained directly from the foregoing companies, provide the name of the person of each company who communicated such information to TexPirg. (b) With respect to TexPirg's answer to Interrogatory No. F9, state whether TexPirg has any documents or studies showing that HL&P's industrial customers can generate electricity more cheaply and more reliably than HL&P. If TexPirg has no such information state the basis for the answer provided in response to Interrogatory No. F.9."

TexPirg's answer was as follows:

> "By talking with people at the City of Houston, and Gulf Coast Waste Disposal Authority, and reading the newspaper. (b) The companies would not be planning to generate their own electricity unless it was cheaper and more reliable."

This answer is clearly not responsive to the interrogatory. TexPirg's answer indicates, at a minimum, that it did talk with people at the City of Houston and Gulf Coast Waste Disposal Authority. The interrogatory required that TexPirg p ide the names of persons communicating information to TexPirg. TexPirg should be required to provide that information now.

Subpart (b) of Interrogatory No. 20 asks for documents or studies. TexPirg's answer is clearly nonresponsive and does not indicate whether TexPirg has any

such studies or not. TexPirg should be required to answer this interrogatory now. Furthermore, Interrogatory No. F9 of Applicant's First Interrogatories to TexPirg requested TexPirg to identify "the factors which you believe will cause an increase in the amount of self-generation by 1987." TexPirg answered: "The users wish a cheaper, more reliable source of power." Clearly, TexPirg has not yet responded to Applicant's fundamental request for identification of the factors that are going to cause an increase in the amount of self-generation. Applicant has now attempted to elicit that information on two occasions and has gotten totally evasive answers from TexPirg. TexPirg should be required to identify the factors that will cause an increase in self-generation by 1987 or state that it has no such information.

Interrogatory No. 24. Applicant's interrogatory was as follows:

> "(a) Referring to the discussions between counsel and Mr. Doherty set forth at pages 87 through 94 of John F. Doherty's deposition dated March 26, 1979, state whether TexPirg now regards the limitations on chlorine discharge set forth in the EPA permit for the Allens Creek project as satisfying TexPirg's concern with respect to chlorine discharges in the lake, and if not, why not and who within TexPirg so concluded. (b) In addition, state whether TexPirg has concluded that the chlorine minimization study described in the EPA permit satisfies TexPirg's contention with respect to chlorine discharges into the lake and, if not, state the reasons why and who within TexPirg so concluded."

In what is clearly the most egregious answer so far, TexPirg stated as follows:

> "(a) We have no copy of what Mr. Doherty said about Chlorine discharges since you will not let either Mr. Doherty or anyone else have a copy of his deposition to read. Mr. Doherty does not work for TexPIRG anymore and was not authorized to state that TexPIRG was not concerned about chlorine discharges that are twice the levels allowed by the board in the 1975 partial Initial Decision. TexPIRG is as concerned as it ever was, very, about the level of chlorine discharges. WE are concerned about the bad effects on the fish and other aquatic life in the cooling lake for the same reasons that the NRC Staff expressed in 1975. Only Mr. Doherty, if anyone, said they were not concerned. (b) It does not, for the reasons stated above plus the fact that NEPA requires studies before action, not studies after it is too late to do anything about the bad results learned. The study results must go in the ES."

Before posing Interrogatory No. 24, Applicant attempted to elicit from Mr. Doherty on deposition whether the chlorine minimization study that was committed to by Applicant and required by the NPDES permit satisfied TexPirg's concern with respect to chlorine discharges. Mr. Doherty stated that he was unaware of that commitment and committed to advise counsel for the Applicant as to whether that commitment satisfied TexPirg's concern with chlorine discharges.[4/] Having received no reply from Mr. Doherty, counsel for Applicant propounded Interrogatory No. 24. As can be seen,

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4/ Deposition, pp. 90-94.

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Mr. Scott now takes the position that Mr. Doherty was not authorized to speak for TexPirg in his deposition. Nonetheless, the answer given by Mr. Scott is still not responsive to the interrogatory. Subpart (b) of the interrogatory asked, without regard to the discussion with Mr. Doherty in the deposition, why the chlorine minimization study did not satisfy TexPirg's concern with respect to chlorine discharges. All TexPirg has said is that it continues to be concerned about the "bad effects on the fish and other aquatic life in the cooling lake for the same reasons that the NRC Staff expressed in 1975." This is simply not responsive. In the first place, the Staff has in fact concluded that Applicant's chlorine minimization study satisfies its concerns with respect to chlorine discharges. Secondly, TexPirg's answer does not specify why it regards the chlorine minimization study as being an inadequate methodology for minimizing chlorine impacts in the cooling lake.

The interrogatory specifically requested identification of the person within TexPirg who is continuing to press TexPirg's contention in the face of the commitment by Applicant. Obviously, Applicant intends to rely upon the commitment to the chlorine minimization study in responding to TexPirg's contention. TexPirg still has concerns with the chlorine discharges in light of that commitment. Applicant is entitled to know why, and who the person is at TexPirg that has so

concluded, so that Applicant may take such person's deposition. Applicant requests the Board to order TexPirg to answer the interrogatory as asked.

Interrogatory No. 25. Applicant's interrogatory was as follows:

> "State whether TexPirg believes that the chlorine minimization study referenced in Interrogatory No. 23 hereof should be done prior to plant operation, and if so, how the study could be done prior to plant operation."

TexPirg's answer was as follows:

> "Yes, Houston Lighting & Power or NRC should fund or carry out an experiment to confirm both the amount of chlorine needed to keep the plant 'clean', and what fish can tolerate. It is amazing that plants could have operated for years, and yet the claim is stated that we still do not know these things. In fact it is known that such concentrations are harmful to fish and Applicant does not wish to admit this. The Final ES clearly shows the harmful affects [sic] on page S.5-16, 17, 18, 19. Since the chlorine harms the environment, the burden is on the Applicant to find alternative ways to reduce the impact."

This answer is clearly nonresponsive to the interrogatory and TexPirg should be required to answer the interrogatory at this time.

Interrogatory No. 26. Applicant's interrogatory was as follows:

> "Specify the amount of temperature change required to induce thermal shock for the different types of game fish normally found in lakes in Texas. Provide the source of your answer."

TexPirg gave the following answer:

> "The Staff of the NRC could find no such data, therefore the Applicant has not met its burden of proof that requires them to show that no harm can happen due to the thermal shock."

This answer is clearly not responsive to the interrogatory and TexPirg should be ordered to answer the interrogatory or state that it has no such information.

Interrogatory No. 31. Applicant's interrogatory was as follows:

> "(a) Specify every reason why TexPirg believes that Applicant cannot barge the reactor vessel up the San Bernard without channelizing the river. Provide all assumptions used in answering this question (i.e., weight, length and width of the reactor vessel; length, width and depth of the barge; width and depth of the San Bernard River at the point where TexPirg alleges the river will have to be channelized; etc.). (b) Specify all adverse environmental effects which TexPirg alleges will result from Applicant's plan to move the reactor pressure vessel to the site by barging to an unloading point on the San Bernard River and transporting the reactor vessel overland to the site from that point. (c) State who answered this interrogatory. (d) Provide the name of TexPirg's expert witness on this contention.

TexPirg's answer was as follows:

> "The barge when loaded with the reactor vessel in the river will not be deep enough to go up the length of the river. This is especially true near the mouth of the river. (b) Dredging will change the character of the river such that it will cause destruction of much of the life in the river. Construction of the unloading dock will damage both the land and water near the site. Transportation of the vessel along the roads to the Allens Creek site will destroy the roads and bridges. (c) Jim Scott. (d) None yet."

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TexPirg's answer to Interrogatory No. 31(a) is clearly not responsive. TexPirg asserts, without any basis, that the river will not be deep enough for the barge. Applicant is entitled to know all of the assumptions underlying the conclusion stated in TexPirg's answer, and, Applicant has in fact requested such information in the interrogatory. TexPirg should be required to provide those assumptions now.

Interrogatory No. 32. Applicant's interrogatory was as follows:

> "(a) With respect to TexPirg Contention 10, explain what in your view, Applicant must do in order to demonstrate compliance with 10 CFR Part 50, Appendix A, Criterion 31, with regard to intergranular stress, corrosion and cracking. In so doing, explain why the current metal content provided in the ACNGS design will not withstand excess oxygen levels, superposed loads, and residual stresses. (b) Identify any documents relating to the NRC investigation of stress, corrosion, and cracking problems at other BWR units and identify the specific portions of those documents which indicate that similar problems may occur at ACNGS. (c) State who answered this interrogatory. (d) Provide the name of TexPirg's expert witness on this contention."

TexPirg's answer was as follows:

> "(a) Meet that criteria. Many other plants approved by the same NRC did not meet that criteria under operating conditions. (b) I don't have any of those documents. Some of the reactors with similar problems are: Dresden 1, Oyster Creek 1, Nine mile [sic] Point 1, LaCrosse, Elk River, Humbolt Bay 3, Dresden 2, Quad Cities 1 and 2, Millstone 1, Peach Bottom 3, Monticello, and Duane Arnold. (c) Jim Scott. (d) None yet."

TexPirg's answer to Part (a) of this interrogatory is clearly not responsive and TexPirg should be required to answer the interrogatory or state that it has no idea as to what Applicant must do to meet Criterion 31.

Interrogatory No. 33. Applicant's interrogatory was as follows:

> "(a) With respect to TexPirg Contention 11, specify the basis for your assertion that Applicant has not adequately assessed the effects of flow-induced vibration on jet pumps, spargers, fuel pins, core instrumentation, and fuel rods. In so doing, identify the five BWR units which experienced feedwater sparger failures from 1975 to 1976 as a result of flow-induced vibration and state whether the feedwater spargers on those plants are exactly the same as those planned for ACNGS. (b) State who answered this interrogatory. (c) Provide the name of TexPirg's expert witness on this contention."

TexPirg's answer was as follows:

> "The five reactors are Millstone 1, Pilgriam [sic], Monticello, Dresden and Quad Cities. Applicant has the burden to show that its system will work. (b) Jim Scott. (c) None yet."

TexPirg's answer to this interrogatory is not responsive since it does not specify any basis for TexPirg's contention and it even fails to state whether the feedwater spargers on the named plants are the same as those planned for ACNGS. TexPirg should be required to provide an answer now.

Interrogatory No. 34. Applicant's interrogatory was as follows:

> "(a) With respect to TexPirg Additional Contention 6, provide the calculation used in determining that the water within the weir wall will not clear the first row of vents before the differential pressure exceeds 28 psi. (b) Define 'mannings roughness factor' and identify the source of this factor as included in your calculation of dry well differential pressure during a LOCA. (c) What do you calculate to be the peak differential pressure reach during this accident? Provide the calculation that shows this value. (d) Show that portion of the calculation demonstrating the proper accounting for the mannings roughness factor delays the time to clear the first row of vents by 0.5 seconds. (e) Provide the calculation that shows the sequence of events postulated in TexPirg Additional Contention 6 that will lead to a containment vessel pressure in excess of 15 psig. (f) Provide the basis for the statement that a containment vessel pressure in excess of 15 psig will cause the containment vessel to crack. (g) State who answered this interrogatory. (h) Provide the name of TexPirg's expert witness on this contention."

TexPirg's answer was as follows:

> "We have no such calculation, and don't need one. (b) Manning's roughness factor is the n in the Manning formula for hydraulic flow which is Velocity equals 1.49/n times (hydraulic radius) 1/2 times (Slope of channel) 1/2. (c) Over 35 psi. (d) Not done. (e) The excess pressure will destroy the dry well so that the pressure reduction from the suppression pool will not be achieved allowing the pressures inside the containment to rapidally [sic] reach levels much in excess of 15 psig. (f) The containment will not crumble at small pressures above 15 psi, but will be at the excessive pressure generated during accidents. (g) Jim Scott. (h) None."

TexPirg has provided a specific answer to Interrogatory 34(c), but has not provided a calculation used to derive that answer as requested in the interrogatory. Mr. Scott should be required to provide the calculation since his response to subpart (c) clearly indicates that the peak differential pressure was calculated. Furthermore, if the calculation does exist then Mr. Scott should be required to answer subparts (a), (b) and (d) of the interrogatory. Subpart (e) likewise called for a calculation which is not provided in Mr. Scott's answer. Finally, TexPirg's answer to Subpart (b) of this interrogatory is totally non-responsive in that TexPirg was asked not only to define "mannings roughness factor" but to also show how the factor is included in the calculation of dry well differential pressure during a LOCA.

Interrogatory No. 35. Applicant's interrogatory was as follows:

> "(a) With respect to TexPirg Contention 8, explain the basis for the statement that Applicant only has a manually operated SCRAM system as its redundant system. In so doing, specify the exact changes that need to be made in the Applicant's SCRAM system in order to provide a sufficiently redundant SCRAM system. (b) State who answered this interrogatory. (c) Provide the name of TexPirg's expert witness on this contention."

TexPirg's answer was as follows:

> "(a) The SER. A SCRAM such as that used in the N reactor at Handford, Washington should be used. (b) Jim Scott. (c) None."

As an initial matter, a reference to the SER without specific pages is clearly not sufficient. Secondly, TexPirg's simple reference to a SCRAM system on a Department of Energy production reactor does not in any way answer that portion of the interrogatory requiring TexPirg to specify the exact changes that need to be made in Applicant's SCRAM system in order to provide a sufficiently redundant SCRAM system. TexPirg should be required to answer the interrogatory.

For the foregoing reasons, the Applicant requests that the Board order TexPirg to provide more complete answers to Interrogatory Nos. 1, 2, 3, 5, 6, 8, 9, 11, 16, 17, 20, 24, 25, 26, 31, 32, 33, 34 and 35 of Applicant's Second Interrogatories to TexPirg.

In order to avoid unduly burdening the Board, Applicant has confined its request to those of the second set of interrogatories it considers essential. In appraising the motion, Applicant requests the Board to note that, as discussed above, none of the answers were under oath as required by the rules and, therefore, not one would be adequate even if it was adjudged responsive. In addition, both the signatory to the first set of interrogatories (Mr. Doherty) and TexPirg's counsel (Mr. Scott) have cast serious doubt on the former's authority to sign the answers. In

these circumstances, any doubts concerning Applicant's right to responsive answers to the specified questions, under oath or affirmation and signed by a clearly authorized agent or officer of TexPirg, should be resolved in favor of Applicant.

Because of its importance to the conduct of Applicant's case and to the integrity of the Commission's administration process, Applicant requests prompt oral argument if this motion is opposed.

Respectfully submitted,

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	§	
	§	
HOUSTON LIGHTING & POWER COMPANY	§	Docket No. 50-466
	§	
(Allens Creek Nuclear Generating Station, Unit 1)	§	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Applicant's Motion to Compel Further Answers in the above-captioned proceeding were served on the following by deposit in the United States mail, postage prepaid, or by hand-delivery this 21st day of June, 1979.

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EXHIBIT A

3-27-79

UNITED STATES OF AMERICA
NUCLEAR NEGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	X	
	X	
HOUSTON LIGHTING & POWER COMPANY	X	Docket No. 50-466
	X	
(Allens Creek Nuclear Generating Station, Unit 1)	X	
	X	

TEX PIRG RESPONSE TO H. L&P'S FIRST SET OF INTERROGATORIES

Tex PIRG submits the following answers to the questions. These responses were prepared by John Doherty.

Tex PIRG Contention 1

1. Yes. You have them.
2. n/a.
3. I do not yet know each person to be called as a witness. Efforts are now underway to locate such people. An effort will be made to have you and the NRC to pay for at least one expert for each contention to testify for Tex PIRG.
4.(a) It would be obviously superior from both an environmental and safety impact.(b)Yes.Environmental Report (ER).(c) You have it.
5.(a) I don't know. (b)Almost 11,000 acres of prime and unique farm land would be lost for no good reason. Such loss would be very significant. (c) ER and Final Supplement to Final Environmental Statement(FES Supp) and FES.
6.(a) I don't know, but the FES Supp says that it would be significant. (b)n/a (c)You have.
7.(a)Statute creating subsidence district for Houston area.(b) Many will have to in future (c)The Texas Water Plan (d)You already have it.
8. (a)The FES Supp says 1,041 acres less.(b)Over 1,000 acres of prime and unique farm land would be lost that is located near a large city that will need the land to feed several million people without wasting fuel for transportation from the California farms that are being destroyed by salt deposits.(c) FES Supp.
9. (a)Those stated in the Final ES's for S. Texas and Allens Creek. (b)Over 4 million fewer people would be within the 50 mile radius of the plant that could emit more radiation than a thousand atomic bombs and is planned to emit more radioactive materials than any other plant.

The environmental damages will have a much worse effect at the Allens Creek location because it is closer to the people that would be using the environment that was destroyed. (c)I don't know what p 81 and 82 say. (d)You have them.

Contention 2

1.Yes. The ER, FES, and FES Supp.

2. n/a

3. I don't know who yet.

4. (a) The shore line of the original lake located north and northeast of the present lake. None of it will be available because it is without either water nor park area.(b)(i)No (ii)Yes,the fish restocked would soon die and /or be contaminated.(e) you have the ER and FES and FES Supp.

5.(a) mg/l and ppm;free available chlorine,total residual chlorine (b) As explained in FES Supp. (c) You have.

6. (a) No.(b)Because the total nutrient loading to the lake is expected to be high as is the thermal loading which will greatly increase the algae growth.(c)(i)No(ii)yes (iii)partially, because the lake is smaller and hotter.(e) You have.

7. (a)All present in the Brazos, Allens Creek, sewer discharges and nuclear plant discharges.These include mercury,cadmim, and lead as well as cobalt, copper, iorn, manganese, nickle, strontium and zinc. (b)Most fish will be unable to live in the lake even if there would not be excessive heavy metal concentrations. Those most likely to NOT live are the fish that feed off of the bottom of the lake where the heavy metals concentrate such as carp. (c) I know of no safe level for heavy metal concentrations in fish, just as there is no "threshold" for radiation that is safe.(d) The differences would be at least double that of the Brazos, but in addition it would be much higher because in addition the levels in the Allens Creek discharge, Wallis, Sealey, and plant discharges would be added and their concentrations are higher than that of the Brazos where sampled.(e)You have.

8.(a) It varies depending on type of fish, rate of change, and prior temperatures as well as other paramaters in the fish environment.I expect only rough fish could live anyway. Some would be killed by the thermal shock of going from cold to hot, but most would be killed during the winter (when the base load is less needed and the plant will be regularly closed for refueling) when the shock is from hot to cold. (b)Yes I disagree because each year the plant will close in the winter months, and most of the lakes fish will be near the discharge. (c)You have.

Contention 4

1. (a) Yes. The ER, ER Supplement, and FES Supplement all support such a relocation. In fact, request 16 in the ER Supplement supports such a move.
2. N/A
3. We don't know who will be called yet.
4. There are several, but the map with request 17 in the ER Supplement is one.
5. A large amount. It would save Brazos River water, and allow a better spawning area, and a better shoreline for a public recreation area.
6. You have.

Contention 5

1. The final supplement to the final environmental statement has a brief section on page S.9-5 on combustion of refuse which shows that inadequate attention was given to this alternative source of electrical energy. While the report does cite two prototype plants that were operational at the time of the report it fails to even mention the work that was going on in Houston in 1975 to plan for a large scale refuse combustion facility under the direction of Paul Davies of the Gulf Coast Waste Disposal Authority. It is my understanding from Mr. Davies that Houston Power and Light was well aware of this proposed facility and in fact HL&P made it clear to Mr. Davies that electrical power generated from even a modest refuse combustion facility would not be allowed into the electrical system under HL&P's control. I believe as a result of this lack of cooperation at even the study phase of a refuse combustion system for the Houston area that the project that is being carried forward is much more modest than would have been the case with HL&P cooperation. (This information was obtained from a telephone conversation with Mr. Davies in the fall of 1978 with Gregory Skie.)

   The final supplement to the final environmental statement also fails to mention the project under the control of Browning Ferris Industries in Houston to develop a refuse derived fuel. The project has been active for the last several years and is in short an attempt to extract a paper rich fraction from refuse for use as a primary or supplemental boiler fuel.

   Failure to mention these local projects in particular indicates that no conscientious research was done into the possibility of generating electrical power from the combustion of municipal refuse in the Houston area. As the potential for electrical power production from refuse is large and may in fact obviate the need for the Allens Creek Nuclear facility a complete study of this alternative source of energy should be undertaken.

2. The response given above will also apply to question number two.

3. A list of person's will be supplied as soon as available. Inquiries have been made with and I expect to have confirmations shortly. I do expect Dr. Jack Matson from the Department of Environmental Engineering at the University of Houston, a representative from the National Center for Re-

source Recovery, and possibly a person who has worked in the recovery of materials and energy from solid waste for the past 10 years who now has his own company in this area. These witnesses will testify as to the feasibility and potential for materials and energy recovery from solid waste in the Houston and Harris County area.

4. The attachments showing existing plants published by the National Center for Resource Recovery list the operational plants by location, type, and owner. The one page attachment published by the Environmental Protection Agency in their Fourth Report to Congress lists the plants that were in the operational, design, and planning stage about the time, or shortly after the time, the first environmental statement on the Allen's Creek Plant was written. Many more cities and utilities were actively looking into the potential for refuse combustion by the time of the supplement to the final environmental report written in August of 1978. Europe has had a large number of successful waste heat recovery refuse incinerators in operation for many years. The best current source of information on these plants is the Handbook of Solid Waste Disposal: Materials and Energy Recovery. Van Nostrand Reinhold Environmental Engineering Series, 1975. A list by name, owner, and location of the plants in Europe is in this book. I will be happy to send a photocopy of the relevant table as soon as the book gets back into my hands.

5. This information was obtained from the enclosed handout published by the EPA in their Fourth Report to Congress: Resource Recovery and Waste Reduction 1977 page 51. A listing of the communities with facilities 1) in operation 2) under construction 3) in the advanced planning stage 4) or being studied is listed on page 47 of the EPA's Fourth Report to Congress on Resource Recovery and Waste Reduction 1977. I have included it as a three page attachment.

6. Such an estimate will be forthcoming. Such an estimate will include amortization of plant construction costs, operation of the plant, as well revenues from the sale of electricity, recovered materials, and income from the City of Houston for disposal of the cities solid waste.

7. The following is a more accurate assessment of the potential for electrical power production from refuse in the Houston area.

   6,000 tons/day x 80% of the refuse is combustible = 4,800 tons/day
   4,800 tons/day x 2,000 lb./ton x10,000 BTU/lb of pretreated refuse = 9.6×10^{10} BTU/day

   9.6×10^{10} BTU/day x 40% heat to electrical conversion efficiency = 3.84×10^{10} BTU/day
   3.84×10^{10} BTU/day x 0.293 watt-hours/BTU x 1 day/24 hours = 469 Mega Watts

   The earlier estimate was based on the thermal energy of a smaller amount of refuse. Although this amount of electrical energy falls short of the peak power estimate of the Allen's Creek plant, I believe it is important to remember that a refuse combustion plant will have far less down time than a nuclear plant. On an annual basis the total electrical power output of these two facilities would then be brought much closer to one another. More details on power production will be provided later.

8. This statement means that in an area that produces 6,000 tons of refuse per day, it is reasonable to assume that half of this amount could be diverted from land fills to a waste processing facility for materials and energy recovery.

9. Several sources list the heat content of mixed solid waste (5,000 BTU/lb.), separated solid waste (10,000 BTU/lb.) and coal (11,000- 14,000 BTU/lb.). The best of these sources is, the Handbook of Solid Waste Disposal: Materials and Energy Recovery. Van Nostrand Reinhold Environmental Engineering Series, 1975. Another is, Energy Conservation Through Improved Solid Waste Management by Robert Lowe, EPA 1974.

   The two landfills in Houston accept approximately 6,000 tons of refuse according to Browning Ferris Industries (the operators of the landfills). A published source for this figure will be provided as soon as possible.

Contention 6

1. Yes. ER.
2. n/a
3. We don't have one yet.
4.(a) FAA (b) 30%/3 yr X 40/3 equals 400% in 40 years.(c) Houston (d) Everyone in Houston knows it.(e) NRC staff and book in U. of Houston.
5. None of this is known for sure yet, BY ANYONE.

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Contention 7

1. Yes, ER and FES, ~~Long Island Lighting~~ (Shoreham) ALAB-156, 10/26/73 RAI 7-10, 831-57.
2. n/a
3. Andrew Sansome, Texas Energy Extension Service, Univ. of Houston, Houston 77004, 749-1756
4.(a)Their management could authorize it, and the company could charge for their services and expenses. (b) All people in the service area would be allowed the services.(c)I don't understand the question because it is so vague.(d) Only cost-benefit should be considered so long as all costs and benefits are used and properly measured. (e)First come-first served.(f)It was not claimed in the contention that the retrofits would replace all the need for power, since the use of solid waste would help also.
5. If half of the cost of ACNGS were spent on conservation then the use of solid waste would eliminate the need for any nuclear plant.
6. The question does not make any sense since 4(e) has no dates.
7. There are many companies and each are owned by thousands of stockholders so it is too much of a burden to answer fully, but Dow Chemical is one of them, and Amaco is another.
8. I think that Shell, Exxon, Browning-Ferris, and Monsanto are building or planning to build their own energy sources such as oil or coal fired plants.
9. The users wish a cheaper, more reliable source of power.
10. It is likely to be enough such that with the other reductions in energy use and alternative sources of energy that there will be no need for a nuclear plant in the Houston area.
11. The rate must go up with increased usage, and the rate should

be higher for peak usage times so that there will be less need for peak units.

12. It is not certain that Dr. Wells will testify, and he has not prepared his statement so far as I know.

13. I don't know for certain.

14. a Building and landscape design. (b) I don't know exactly. (c) I don't know. (d) The cost varies with the system and the size of home. (e) I don't know y .. (f) No.

15. The applicant, Houston L&P, admitted that their projections of demand had decreased by 22 %.

16. ER Supp, Table S1.1-2(modified), and table S.8.6 on page S.8-6 of FES Supp. You have both.

G. Other

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Service to all parties via U. S. Postal Service, this 27 th of March, 1979.

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Carro Hinderstein
Brenda McCorkle

Respectfully submitted,

John Doherty

John Doherty
Executive Director of Tex PIRG
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TABLE 18

SUMMARY OF RESOURCE RECOVERY MIXED-WASTE FACILITIES IMPLEMENTATION, SUMMER 1976*

Location†	Type‡	Capacity (tons per day)	Products/markets	Startup date
Operational facilities (21):				
Altoona, Pa.	Compost	200	Humus	1963
Ames, Iowa	RDF	400	RDF, Fe, Al	9/75
Blytheville, Ark.	MCU	50	Steam/process	11/75
Braintree, Mass.	WWC	240	Steam/process	1971
Chicago, Ill. (Southwest)	RWI	1,200	Steam	1963
Chicago, Ill. (Northwest)	WWC	1,600	Steam (no market)	1970
N-E. Bridgewater, Mass.	RDF	160	RDF/utility	1974
D-Franklin, Ohio	Materials recovery	150	Fiber, Fe, glass, Al	1971
Groveton, N. H.	MCU	30	Steam/process	1975
Harrisburg, Pa.	WWC	720	Steam (no market)	1972
Merrick, N. Y.	RWI	600	Electricity	1952
Miami, Fl.	RWI	900	Steam	1956
Nashville, Tenn.	WWC	720	Steam/heating & cooling	7/74
Norfolk, Va.	WWC	360	Steam/Navy base	1967
Oceanside, N. Y.	RWI/WWC	750	Steam	1965/74
Palos Verdes, Calif.	Methane recovery		Gas/utility & Fe	6/75
D-St. Louis, Mo. §	RDF	300	RDF/coal-fired utility	1972
Saugus, Mass.	WWC	1,200	Steam/process	4/76
Siloam Springs, Ark.	MCU	20	Steam	9/75
N-South Charleston, W. Va.	Pyrolysis	200	Gas, Fe	1974
N-Washington, D.C.	RDF	80	RDF, Fe, Al, glass	1974
Facilities under construction (10):				
D-Baltimore, Md.	Pyrolysis	1,000	Steam/heating & cooling Fe, glass	6/75
G-Baltimore County, Md.	RDF	550	RDF, Fe, Al, glass	4/76
Chicago, Ill. (Crawford)	RDF	1,000	RDF/utility	3/77
Hempstead, N. Y.	WRDF/WWC	2,000	Electricity, Fe, Al, glass	NA
Milwaukee, Wis	RDF	1,000	RDF, corrugated, Fe	1977
D-Mountain View, Calif.	Methane recovery		Gas/utility	6/77
N-New Orleans, La.	RDF¶	650	Nonferrous, Fe, glass, paper	11/76
Portsmouth, Va. (Shipyard)	WWC	160	Steam loop	12/76
D-San Diego County, Calif.	Pyrolysis	200	Liquid fuel/utility	4/77
St. Louis, Mo.	RDF	6,000	RDF/utility, Fe, glass, Al	NA
Communities in advanced planning (33): (RFP issued, design study underway, or construction funding made available)				
Akron, Ohio	WWC	1,000	Steam/heat, cool process	7/78
Albany, N. Y.	RDF	1,200	RDF, Fe	NA
Bridgeport, Conn.	RDF	1,800	RDF, Fe, Al, glass	NA
Central Contra Costa County Sanitation District, Calif.	RDF	1,000	RDF/sludge incinerators	1979
Chemung County, N. Y.	RDF	300	RDF, Fe	NA
Dade County, Fla.	WWC/wet-pulp	3,000	Electricity/utility, Fe	NA
G-Detroit, Mich.	RDF/WWC	3,000	RDF/steam	NA
Hackensack, N. J.	RDF	2,500	Steam/utility	NA
Haverhill, Mass.	WWC	3,000	RDF/utility, Fe	NA

(Continued)

A Nationwide Survey of Resource Recovery Facilities (ref. 6), updated.

†D = EPA demonstration grant; G = EPA implementation grant; N = non-EPA pilot or demonstration facility; E = ERDA grant.

‡RDF = refuse-derived fuel; WRDF = wet-pulped refuse-derived fuel; WWC = waterwall combusion; RWI = refractory wall incinerator with waste-heat boiler; MCU = modular combustion unit.

§Plant closed down in 1976.

¶Uses RDF technology, but current plan is to landfill the light fraction because of lack of market.

TABLE 18

SUMMARY OF RESOURCE RECOVERY MIXED-WASTE FACILITIES IMPLEMENTATION, SUMMER 1976 (continued)

Location†	Type‡	Capacity (tons per day)	Products/markets	Startup date
Communities in advanced planning (33): (continued)				
Honolulu, Hawaii	NA	2,000	Utility	NA
Jacksonville, Fla. (Navy base)	MCU	50	Steam, Fe	NA
Key West, Fla. (Navy base)	Compost	50	Humus, Fe	NA
G-Lane County, Oreg.	RDF	750	RDF	NA
G-Lexington-Fayette Urban Cty. Gov't., Ky.	WWC	1,050	Steam, Fe	NA
Mayport, Fla. (Navy base)	RWI	40	Steam	NA
Memphis, Tenn.	WWC/RDF	2,000	NA	1980
Minneapolis-St. Paul, Minn.	WWC	1,200	Steam/papermill	NA
Monroe County, N. Y.	RDF	2,000	RDF, Fe, Al, glass	NA
G-Montgomery County, Ohio	RDF	1,600	RDF	NA
New Haven, Conn.	WWC	1,800	Steam, Fe	NA
North Little Rock, Ark.	MCU	100	Steam	1977
Onondaga County, N. Y.	WWC	1,000	Steam/heat & cool, Fe	NA
Palmer Township, Penn.	RDF	150	Fuel/cement kiln, Fe	NA
E-Pompano Beach, Fla.	Methane recovery	50	Methane	NA
Portland, Oreg.	RDF	200	RDF, Fe	NA
Riverside, Calif.	Pyrolysis	50	Electricity	NA
Salem, Lynn & Beverly, Mass.	NA	750	NA	NA
Seattle, Wash.	Pyrolysis	1,500	Ammonia	NA
Smithtown, N. Y.	Hand sort	1,000	Newspaper, corrugated, Fe	11/77
Sun Valley, Calif.	Methane recovery		Gas/utility	1978
Takoma, Wash.	RDF	NA	Steam	NA
Westchester County, N. Y.	NA	1,300	NA	NA
D-Wilmington, Del.	RDF/sludge	300	RDF, Fe, Al, glass, humus	NA
Communities which have commissioned feasibility studies (54):				
Anchorage, Alaska		500		
Auburn, Maine		200		
Allegheny County, Pa.		2,000		
Babylon, Huntington & Islip, N. Y.		3,000		
Brevard County, Fla.		200		
G-Charlottesville, Va.		NA		
Cowlitz County, Wash.		100		
Columbus, Ohio		NA		
Cuyahoga County, Ohio		1,200		
DeKalb County, Ga.		1,000		
Dubuque, Iowa		500		
District of Columbia (Metro Area COG)		750		
G-Denver, Colo.		1,200		
Dutchess County, N. Y.		700		
Erie County, N. Y.		2,000		
Fairmont, Minn.		150		
Hamilton County, Ohio		1,500		
Lawrence, N. Y.		500		
Lincoln, Neb.		NA		
Lincoln County, Oreg.		NA		
Madison, Wisc.		200		
Marquette, Mich.		NA		
Miami County, Ohio		NA		
G-Middlesex County, N. J.		NA		
Minneapolis (Twin Resco)		NA		
Montgomery County, Md.		1,200		
Morristown, N. J.		NA		
Mt. Vernon, N. Y.		400		

(Continued)

See previous page for footnotes.

TABLE 18

SUMMARY OF RESOURCE RECOVERY MIXED-WASTE FACILITIES IMPLEMENTATION, SUMMER 1976 (concluded)

Location	Capacity (tons per day)
Communities which have commissioned feasibility studies (54): (continued)	
Niagara County, N. Y.	760
G-New York, N. Y. (Arthur Kill)	1,500
Oakland County, Mich.	NA
Orange County, Calif.	1,000
Phoenix, Ariz.	NA
Pasadena, Calif.	200
Peninsula Planning District, Va.	NA
Philadelphia, Pa.	1,600
G-Richmond, Va.	NA
Riverview, Mich.	NA
Rochester, Minn.	NA
St. Cloud, Minn.	NA
Salt Lake County, Utah	750
Scranton, Pa.	NA
S. E. Virginia Planning District	1,500
G-Springfield, Ill.	NA
Springfield, Mo.	1,000
Tallahassee, Fla.	NA
Tampa/St. Petersburg, Fla.	NA
Toledo, Ohio	1,200
Tulsa, Okla.	NA
Tennessee Valley Authority	2,000
Western Berks County, Pa.	250
Western Lake Superior Sanitary District	400
Winnebago County, Ill.	NA
Wyandotte, Mich.	1,000

G = aided by EPA implementation grant.

TREND IN MIXED-WASTE RESOURCE RECOVERY FACILITY IMPLEMENTATIONS*

Facility Status	July 1974	January 1975	July 1975	January 1976	July 1976
Operational	15	15	19	19	21
Under construction	7	8	8	10	10
Advanced planning	23	30	30	29	44
Feasibility studies‡	25	32	37	52	65
Total	70	85	94	110	118

*EPA interview and file data.

‡Prior to 1976, this category included all communities known to EPA which had "expressed interest" whether or not resources had been committed for feasibility studies.

Source: Fourth Report to Congress: Resource Recovery and Waste Reduction. U.S. Environmental Protection Agency SW-600, 1977, p. 51.

NATIONAL CENTER FOR RESOURCE RECOVERY, INC.
1211 CONNECTICUT AVE., N.W., WASHINGTON, D.C. 20036 (202/223-6154)

RESOURCE Briefs RECOVERY

RESOURCE RECOVERY ACTIVITIES . . . A STATUS REPORT

—September 1978—

Periodically, Resource Recovery Briefs summarizes the status of some of the resource recovery activities in the United States. In addition to the systems listed here, a number of communities are magnetically separating ferrous metals, conducting source separation programs for old newspapers, etc. While this report cannot be considered complete, future issues will present other systems as they are reported.

Location	Key Participants	Process	Output	Reported Capacity	Reported Capital Costs (millions of $)	Status
Akron, Ohio	City of Akron; Glaus, Pyle, Schomer, Burns & De Haven; Ruhlin Construction Co.; Babcock & Wilcox Co. (boiler supplier); Teledyne National (operator)	Shredding; air classification; magnetic separation; burning of refuse-derived fuel (RDF) product in semi-suspension stoker grate boiler	Steam for urban heating and cooling and industrial use; magnetic metals	1000 tons per day (TPD)	46[a]	Under construction; one-half complete; in shakedown by July 1979; fully operational by Jan. 1980
Albany, N.Y.	City of Albany and 10 surrounding communities; Smith and Mahoney (designers and project managers)	Shredding; magnetic separation; combustion in semi-suspension stoker grate boiler; recovery of nonferrous from boiler ash	RDF; magnetic metals; steam for urban heating and cooling; nonferrous metals	750 TPD	22	Groundbreaking held in Oct. 1977; construction 20% complete; in operation by Spring 1980
Ames, Iowa	City of Ames; Gibbs, Hill, Durham & Richardson, Inc. (designer)	Baling (waste paper); shredding; magnetic separation; air classification; screening; other mechanical separation	Refuse-derived fuel for use by utility; baled paper; magnetic metals; aluminum, other non-magnetic metals	200 TPD 150 tons per hour [TPH]	6.1[b]	Operational since 1975
Baltimore, Md.*	City of Baltimore; EPA	Landgard® process: shredding, pyrolysis, water quenching, magnetic separation	Steam; magnetic metals; glassy aggregate	1000 TPD	EPA-7 State of Maryland - 4 City of Baltimore - 11 Monsanto - 4 Additional funds: Dept. of Commerce, F.E.D.A. - 3.1 City of Baltimore - 1	Monsanto Enviro-Chem Systems, Inc., has withdrawn from the project; plant temporarily closed for installation of air pollution control equipment and other modifications; startup scheduled by Winter 1978
Baltimore County, Md.	Maryland Environmental Service; Baltimore County; Teledyne National (designer and operator)	Shredding; air classification; magnetic separation	RDF; magnetic metals; glass for secondary products; aluminum	600-1500 TPD	8.4	Shredding, air classification, magnetic separation and landfilling operational for testing; first transfer station operating
Bridgeport, Conn.	Connecticut Resources Recovery Authority; Occidental Petroleum Corp. and Combustion Equipment Assoc. (designers and operators)	Shredding; magnetic separation; air classification; froth flotation	Eco-Fuel II® (powdered fuel) for use in utility boiler; magnetic metals; non-magnetic metals; glass	1800 TPD	53[c]	Under construction; to be operational by early 1979
Chicago, Ill. (Southwest Supplementary Fuel Processing Facility)	City of Chicago; Ralph M. Parsons Co. (designer); Consoer, Townsend & Assoc.	Shredding; air classification; magnetic separation	RDF for use by utility; magnetic metals	1000 TPD	19[d]	In shakedown; began test-firing RDF; gradual production to reach full capacity by Fall 1978

Location	Key Participants	Process	Output	Reported Capacity	Reported Capital Costs (millions of $)	Status
Chicago, Ill. (Northwest incinerator)	City of Chicago; Metcalf & Eddy, Inc. (designer)	Waterwall combustion	Steam for Brach Candy Co.; post-incineration metals recovery	1600 TPD	23	Operational since 1971; steam delivery line under construction and expected to be on line in 1979
Dade County, Fla.	Dade County; Black Clawson/Parsons & Whittemore, Inc. (designers)	Hydrasposal™ (wet pulping); magnetic and other mechanical separation	Steam for utility to produce electricity; glass; aluminum; magnetic metals	3000 TPD	82	Contracts signed between County and P&W and Florida Power & Light; all state permits approved; state has issued and sold pollution control bonds; construction (site preparation) has begun; shakedown expected in 1980
Detroit, Mich.	City of Detroit	Shredding; air classification; magnetic separation	Steam and/or electricity for use by utility; magnetic metals	3000 TPD	100	Preliminary negotiations underway with joint venture, Combustion Engineering, Inc./Waste Resources Corp., prior to contract signing; agreement for steam purchase by Detroit Edison has been finalized; preparation of environmental impact statement initiated
Duluth, Minn.	Western Lake Superior Sanitary District (operators); Consoer, Townsend & Assoc. (engineers)	Shredding; magnetic separation; air classification; secondary shredding; fluidized bed incineration of RDF and sludge	RDF; ferrous metals; steam for heating and cooling of plant and to run process equipment	400 TPD municipal solid waste; 340 TPD of 30% solids sewage sludge	19[e]	Under construction; projected startup by Apr. 1979
East Bridgewater, Mass.	City of Brockton and nearby towns; Combustion Equipment Assoc.; East Bridgewater Assoc.	Shredding; air classification; magnetic separation; other mechanical separation	Eco-Fuel II® for industrial boiler; magnetic metals	1200 TPD	10-12	Fuel is being made and delivered to user; presently testing
Franklin, Ohio	City of Franklin; Black Clawson Co.	Hydrasposal™/Fibreclaim™ proprietary processes using wet pulping and magnetic separation; heavy media; jigging; electrostatic precipitation; optical sorting	Paper fibers; magnetic metals; aluminum; color-sorted glass	150 TPD (50 TPD being processed)	3.2	Production plant operating since 1971
Hampton, Va.	City of Hampton, NASA Langley Research Center, U.S. Air Force at Langley Field	Mass burning	Steam for use by NASA Langley Research Center	200 TPD	9.4	Design and construction contract awarded to J.M. Kenith Co., Jan. 1978; Proceeding with plans and procurement of equipment
Harrisburg, Pa.	City of Harrisburg; Gannett, Fleming, Corddry and Carpenter, Inc. (designers)	Waterwall combustion; bulky waste shredding (steam driven); magnetic separation; sewage sludge burning	Steam for utility-owned district heating system and for city-owned sludge drying system; magnetic metals	720 TPD	8.3	Operational since Oct. 1972; steam main completion by Oct. 1978; sludge drying facilities completion by mid-1979
Hempstead, N.Y.	Town of Hempstead; Hempstead Resource Recovery Corp. (Div. of Black Clawson/Parsons & Whittemore, Inc.) (owner/operator)	Hydrasposal™ (wet pulping); magnetic and mechanical separation; burning of RDF product in air-swept spout spreader stoker boilers	Electricity from utility-owned turbine generators; color-sorted glass; aluminum; magnetic metals	2000 TPD (150 TPH)	73	Under construction; startup and testing in Aug. 1978
Lane County, Ore.	Lane County; Allis-Chalmers Corp.; Western Waste Corp.	Shredding; air classification; magnetic separation	RDF; magnetic metals	500 TPD	2.1[f]	In shakedown; to be fully operational by Nov. 1978

Locatio	Key Participants	Proces	Output	Reported city	Reported Capital Costs (millions of $)	Status
Madison, Wis.	City of Madison and M.L. Smith Environmental (designers); Madison Gas & Electric Co.	Shredding; magnetic separation; separation of combustibles and non-combustibles; secondary shredding air swept	RDF for use by utility; magnetic metals	400 TPD (max.) (200 TPD being processed)	2.5[g]	Under construction; startup scheduled for Jan. 1979
Milwaukee, Wis.	City of Milwaukee; to expand to surrounding Milwaukee County areas; Americology Div. of American Can Co. (owner/operator); Bechtel, Inc. (designer)	Shredding; air classification; magnetic and other mechanical separation	RDF for use by utility; bundled paper and corrugated; magnetic metals; aluminum; glass concentrate	1600 TPD	18	In shakedown, partially operational; test-firing RDF
Monroe County, N.Y.	Monroe County (owner); Raytheon Service Co. (designer)	Shredding; air classification; magnetic and other mechanical separation; froth flotation	RDF for use by utility; magnetic metals; non-magnetic metals; mixed glass	2000 TPD	50.4[h]	Under construction; 80% complete; startup scheduled for early 1979
Nashville, Tenn.	Nashville Thermal Transfer Corp.; I.C. Thomasson & Assoc., Inc. (designer)	Thermal combustion	Steam for urban heating and cooling	400 TPD	24.5	Operational since 1974
Newark, N.J.	City of Newark; Combustion Equipment Associates and Occidental Petroleum Corp. (designers and operators)	Shredding; air classification; magnetic separation	Eco-Fuel II® for use by utility; magnetic metals	3000 TPD (in 1000 TPD modules; to serve Newark's 700 TPD and surrounding community)	70 (for 3000 TPD) (initially 1000 TPD with a cost of $25 million including fuel user conversion)	Final contract signed in 1977; groundbreaking expected by mid-Fall 1978; to be operational by early 1980
New Orleans, La.	City of New Orleans; Waste Management, Inc. (owner/operator); National Center for Resource Recovery, Inc. (designer/implementer)	Shredding; air classification; magnetic and other mechanical separation	Magnetic metals; aluminum and other non-magnetic metals; glass	700 TPD	7.75[i]	Shredding/landfilling operational; recovering ferrous; aluminum, other nonferrous metals and glass in shakedown
Niagara Falls, N.Y.	Hooker Energy Corp. (Hooker Chemicals and Plastics Corp.) (owner/operator)	Shredding; magnetic separation; burning of shredded refuse	Electricity for use by company complex; magnetic metals	2200 TPD	Approximately 65	Under construction; to be operational early 19[illegible]; $12 million worth of equipment on order
Pinellas County, Fla.	Pinellas County; Florida Power Corp.	Mass burning	Electricity; secondary materials recovered after burning include ferrous metals, aluminum and other non-magnetic metals	2000 TPD	70	Negotiations are underway for a full-service contract with UOP, Inc.; projected to begin operation by 1[illegible]
Pompano Beach, Fla.	Waste Management, Inc.; Energy Research & Development Administration; Jacobs Engineering Co. (designer)	Shredding; air classification; magnetic and other mechanical separation; anaerobic digestion of air classified light fraction with sewage sludge	Methane	50-100 TPD	3.1	Dedicated May 2, 1978 in shakedown
San Diego County, Calif.*	San Diego County; Occidental Petroleum Corp. (designer/operator)	Shredding; air classification; magnetic and other mechanical separation; froth flotation; pyrolysis	Pyrolytic oil; magnetic and non-magnetic metals; glass	200 TPD	EPA - 4.8 San Diego County - 2 Occidental Petroleum - 6.7	Demonstration plant; shutdown pending resolution of [illegible] investigations
Saugus, Mass.	Ten communities including Saugus and part of northern Boston; RESCO (joint venture of De Matteo Construction Co. and Wheelabrator-Frye, Inc.)	Water-wall combustion; magnetic separation	Steam for electrical generation and industrial use; magnetic metals	1200 TPD (two boilers with 600-TPD capacity each)	50	Operational since 1975
South Charleston, W. Va.	Linde Div., Union Carbide Corp.	Purox™ oxygen converter (pyrolysis); shredding	Fuel gas	200 TPD	Unknown	Operational demonstration plant since 1974

Location	Key Participants	Process	Output	Reported Capacity	Reported Capital Costs (millions of $)	Status
Tacoma, Wash.	City of Tacoma (owner/ operator); Boeing Engineering (designer)	Shredding; air classification; magnetic separation	RDF; magnetic metals; steam	500 TPD	2.5[i]	In shakedown; full operation by late Fall 1978
Wilmington, Del.*	Delaware Solid Waste Authority; EPA; Raytheon Service Co.	Shredding; air classification; magnetic and other mechanical separation; froth flotation; aerobic digestion	Ferrous metals; nonferrous metals; glass; RDF; humus	1000 TPD municipal solid waste coprocessed with 350 TPD of 20% solids digested sewage sludge	51[k] 9 from EPA, OSW; 16 from EPA, Water Prog.; 6 from State matching grants; remainder from the Authority through sale of revenue bonds	Contract signed August 10, 1978 with Raytheon Service Co.; groundbreaking expected by Sept. 1979

The following localities are either operating or constructing small modular combustion units to produce steam from mass combustion of municipal solid waste:

Operating:
Blytheville, Ark. (50 TPD)
Groveton, N.H. (30 TPD)
Siloam Springs, Ark. (19 TPD)
North Little Rock, Ark. (100 TPD)

In shakedown:
Crossville, Tenn. (60 TPD)
Salem, Va. (100 TPD)

Under construction:
Lewisburg, Tenn. (50 TPD)

In addition to the systems listed above, projects are underway to recover methane-containing gas mixtures from sanitary landfills which can be purified to pipe line quality. They are:

Azusa, Calif. – Azusa Land Reclamation Co., a wholly-owned subsidiary of the Southwestern Portland Cement Co. – Began operations in April 1978

Mountain View, Calif.* – City of Mountain View; EPA; Pacific Gas & Electric Co. – In shakedown

Palos Verdes, Calif. – Los Angeles County Sanitation District; Reserve Fuels, Inc. (joint venture of Reserve Oil & Gas Co. and NRG, Inc.) – Operational

Staten Island, N.Y. – (Fresh Kills Landfill) – New York City Resource Recovery Task Force; Brooklyn Union Gas Co., Inc.; Leonard S. Wegman, Inc.; New York State Energy Research and Development Authority – Plan to enter demonstration phase of project; preliminary testing of gas has been completed

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The following state and local governments are in the "Request for Proposal" (RFP) stage, *i.e.*, RFP's have been issued – or are reportedly imminent – but contracts have not been signed:

Auburn, Maine
Central South Central Conn.
Jefferson County, Ky.
Knoxville, Tenn.
Montgomery County, Ohio
St. Paul, Minn.
Seattle, Wash.
Tulsa, Okla.

Cost information as reported:

[a]Construction (including $5 million for extensions to existing steam distribution system) $31 million; engineering and construction supervision $1.5 million; interest during construction $5.5 million; contingency, start-up and land costs $1.5 million; fees, underwriting and issuance costs $2.0 million; debt service reserve fund requirement $4.5 million.

[b]Construction and engineering $5.6 million; land $98,000; miscellaneous equipment $165,000; plant start-up in Fall 1975 $322,000.

[c]Total revenues (including bond proceeds and investment income) $54,386,040. Total expenditures: $53,386,040, consisting of the following: project development $3,026,458; bond issue expenses $1,391,413; construction $39,549,771; special capital reserve $5,022,588; debt service $5,395,810 (including main facility and six transfer stations).

[d]Includes design and construction. Funding through G.O. bonds.

[e]Including incineration.

[f]Cost of Phase II of the project including construction of the resource recovery facility alone and in-plant equipment. Built in conjunction with Phase I which includes central receiving, transfer station and transfer equipment which cost approximately $2.2 million.

[g]For the processing plant.

[h]Total funding authorized by county legislature; $50.4 million, including an $18.5 million grant-in-aid from New York State, D.E.C. funding under the Environmental Quality Bond Act. Includes $28.4 million for construction of the resource recovery facility. Construction of Russell Station RDF handling facility is estimated at $8 million. Balance of funds will be spent for engineering, startup, mobile equipment, etc.

[i]Includes Reduction Module (including landfill) $4,908,000 and Recovery Module $2,848,300.

[j]Not including shredder which was already on site.

[k]Total project costs – $51 million, including $20 million for sludge module.

*Partially funded by the U.S. Environmental Protection Agency (EPA)

EXHIBIT B

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	X	
	X	
HOUSTON LIGHTING AND POWER CO.	X	Docket No. 50-466
	X	
(Allens Creek, Unit 1)	X	

TEX PIRG'S RESPONSE TO H L&P'S SECOND SET OF INTERROGATORIES

Tex PIRG submits the following answers to the questions.

1. Building Allens Creek at the S. Texas construction site prevents environmental damages to the farm land, fresh water, wildlife, and nearby people and only 1/5th as many people would be exposed to the safety dangers from the plant within the 50 mile radius. The NRC staff says that 17,700 acre-ft per year would be saved.

2. Page 10.7 of S. Texas ES. Also Houston L&P would not be so dumb as to build a lake that was planned for 4 units if it did not know that it had enough water for four (not just 3) units.

3. Applicant owns 11,152 acres at Allens Creek site of which the bottomland portion(about 9,000 acres) is Prime-1 farmland and the upland portion(about 2,000 acres) is prime-2 farmland.(b) I din't know.

4. Page S.9-11 of Allens Creek final Supplement.

5. The Harris-Galveston County Subsidence District requires present users of ground water to convert to surface water. A large amount of Brazos River is already being diverted for use in the Houston area by the Brazos River Authority, i.e. Oyster Creek Canal system.

6. Rice, sorghum, corn, cotton, hay, and other crops that could be grown on the Allens Creek land would have to be transported longer distances (at high freight rates that will increase as energy increases in cost) (b) I don't know and it is not important to the local people. In some other state the local utality is telling them that the lake flooding their land is an insignificant part of the nationad total because the Allens Creek site will grow their crops. (c) I don' t know, but they now grow cotton, rice, etc that is grown at the Allens Creek site.

7. I read that large operating nuclear plants contain more radioactivity than 1,000 atomic bombs the size of those dropped on Japan.

8. They are higher than that of the Brazos River where the Applicant did limited sampling for heavy metals.(b) No.

9. Common sense aquired by observation , reading , and page S.5-13 of Final ES for Allens Creek.

10. Utalities always try to operate their large base load plants such as nuclear plants during their peak use season which in the Houston area is in the summer.

11. These details can be obtained from Gulf Coast Waste Disposal Authority and Browning and Ferris Corporation by applicant easier than from Tex PIRG.

12. Greg Skie

13. (a) Greg Skie. (b)Mr. Davies of Gulf Coast, head of Houston Solid Waste, and all Houston L & P management involved in not using solid waste.

14. We do not disagree with any of it. We believe that the capial cost of a nuclear plant is even higher, and that when fuel from refuse is added to other fuel instead of being burned alone that the cost per unit of electricity generated will be cheaper than that from nuclear power when all if the costs including environmental costs are considered.

15. (a) Not yet. (b)Mr. Greg Skie, not complete yet,we don't know yet. (c)We don't know details , but such factors should be considered in all generating plants. The amount assumed will be based on past experience and normal "learning curve" assumptions.

16. (a) Greg Skie concluded that after studying the manner. (b) Non-combustible materials such as metal are removed. (c) Prior studies.(d)That is a normal agerage for fossil fuel plants and refuse plants.(e)I don't know.(f) As of 1976, they were listed in our answer to question 5 of contention 5 of the Applicants First set of Interrogatories. I have no newer information yet.

17. I don't know his name, but he seemed to know what he was saying.Also the Houston Post recently indicated that the growth was even more.(b) experience, and the fact that all business assumptions of electrical growth, etc seem to project upon past fast growth in the Houston Area. For example a new business airport just opened up in Fort Bend County, and the City of Houston has just started planning for a new "Intercontinental" type airport near the Allens Creek site.(c) I don't know,partly because I don't know what the question was.

18. The exact location is not yet known at least to the general public,The City will probably own the airport, the airport will be large like intercontential,traffic will eventually be similiar to that at intercontiental, the current status is that the City of Houston and the Chamber of Commerse both want the airport and are planning for it now.

19. 1,200 MWe, study by city of Seattle, Washington.(b) The annual demand for each of the years would be lowered by 10,512. thousand MWhr and the peak hour demand would be lowered by 1,200 MWe if only one half of the cost of Allens Creek was efficiently spent to cause conservation in the Houston area.

20. By talking with people at the City of Houston, and Gulf Coast Waste Disposal Authority, and reading the newspaper.(b) The companies would not be planning to generate their own electricity unless it was cheaper and more reliable.

21. No, but we hope that he will.

22. Not as of this time.

23. We have no documents, but strongly dispute any attempt or statement that claims that thousands of acres of rich farm land can be removed from production in a local area and not affect the production of crops in that local area.

24. (a) We have no copy of what Mr. Doherty said about Chlorine discharges since you will not let either Mr. Doherty or anyone else have a copy of his deposition to read. Mr. Doherty does not work for Tex PIRG any more, and was not authorized to say that Tex PIRG was not concerned about chlorine discharges that are twice the levels allowed by the board in the 1975 partial Initial Decision. Tex PIRG is as concerned as it ever was, very, about the level of chlorine discharges. WE are concerned about the bad effects on the fish and other aquatic life in the cooling lake for the same reasons that the NRC staff expressed in 1975. Only Mr Doherty , if anyone, said they were not concerned. (b)It does not, for the reasons stated above plus the fact that NEPA requires studies before action, not studies after it is too late to do anything about the bad results learned. The study results must go in the ES.

25. Yes, Houston Lighting and Power or NRC should fund or carry out an experiment to confirm both the amount of chlorine needed to keep the plant "clean", and what fish can tolerate.

It is amazing that plants could have operated for years, and yet the claim is stated that still do not know these things. In fact it is known that such concentrations are harmful to fish and the Applicant does not wish to admit this. The Final ES clearly shows the harmful affects on page S.5-16,17,18,19. Since the chlorine harms the environment, the burden is on the applicant to find alternative ways to reduce the impact.

26. The staff of the NRC could find no such data, therefore the Applicant has not met his burden of proof that requires him to show that no harm can happen due to thermal shock.

27. Many organisms that Texas game fish feed on are affected by chlorine levels below 0.002 ppm, and fish are directly killed by levels as low as 0.004 ppm according to the information on page S.5.18 of the Final Supp of Allens Creek ES.

28. (a) Not now, but can replace about half of its capacity such that a single coal plant could replace it now. Also as the Houston area grows it will generate more waste and within the next 20 years it could replace the whole plant with waste alone. Also if all the waste in the Houston area was sent to one location then there would be enough to replace the plant by 1987with a waste fired plant alone. (b) It is not in error , but considers only the present trash at what is now only one site in East Harris County.

29. We don't have any documents now , but everyone including the "Light Company", and the federal government encourage the public to conserve. For example by turning down the air conditioner control so that the temperature does not drop below 80 degrees in the summer can save huge amounts of electricity at no cost. Caulking cracks in windows and doors is almost free and a huge conservation benefit. Even the installation of insullation and solar water collectors(heaters) is said to have a rapid "payback" because of the reduced fuel bills.

30. I don't know what Mr. Doherty stated.He may have meant that burning trash causes some air pollution such as oil and coal. Or he may have meant good effects such as reduced radiation dangers such as those caused by nuclear plants.

31. The barge when loaded with the reactor vessel the river will not be deep enough to go up the length of the river. This is especially true near the mouth of the river. (b) Dredging will change character of river such that it will cause destruction of much of the life in the river. Construction of the unloading dock will damage both the land and water near the site. Transportation of vessel along the roads to the Allens Creek site will destroy the roads and bridges. (c) Jim Scott (d) none yet.

32. (a) Meet that criteria. Many other plants approved by the same NRC did not meet that criteria under operating conditions. (b) I don't have any of those documents. Some of the reactors with similiar problems are: Dresden 1, Oyster Creek 1, Nine mile Point 1, LaCrosse, Elk River, Humbolt Bay 3, Dresden 2, Quad Cities 1 and 2, Millstone1, Peach Bottom 3, Monticello, and Duane Arnold. (c) Jim Scott. (d) none yet.

33. The five reactors are Millstone 1, Pilgriam, Monticello, Dresden, and Quad Cities. Applicant has the burden to show that his system will work. (b) Jim Scott (c) None yet.

34. We have no such calculation, and don't need one. (b) "Manning's roughness factor" is the n in the Manning formula for hydraulic flow which is Velocity equals 1.49/n times (hydraulic radius)$^{2/3}$ times (Slope of channel)$^{1/2}$. (c) Over 35 psi (d) Not done (e) The exc s pressure will destroy the drywell so that the pressure reduction from the surpression pool will not be achieved allowing the pressures inside the containment to rapidly reach levels much in excess of 15 psig. (f) The containment will not crumble at small pressures above 15 psi, but will at the excessive pressures generated during accidents. (g) Jim Scott (h) None.

35. (a) The SER. (b) A SCRAM such as that used in the N reactor at Hanford, Washington should be used. (b) Jim Scott (c) None.

36. (a) Tests on similiar systems. (b) The cables are arranged and composed of materials similiar to those that failed the tests. (c) Each cable must be seperated far enough from all other cables such that fires from one can't spread from cable to cable nor jump from one cable to another. Also each cable must be fireproof. An automatic redundant spray system of different design must be able to reach the full length of all cables. (d) I don't know. (e) Jim Scott (f) None.

Served on all parties. June 6, 1973.
Secretary and Chairman Wolfe.

James Morgan Scott Jr.