

09/29/78

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of
HOUSTON LIGHTING & POWER COMPANY
(Allens Creek Nuclear Generating
Station, Unit 1)

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Docket No. 50-466



STIPULATION BETWEEN THE NRC STAFF AND WAYNE E. RENTFRO

The Petitioner, Wayne E. Rentfro, and the Staff of the Nuclear Regulatory Commission (NRC Staff) have reached the following agreements with respect to the legal standing of the Petitioner to intervene in this proceeding and the contentions he has advanced.

I. INTEREST (STANDING)

The Petitioner has alleged that the proposed transmission line corridor for the Allens Creek Nuclear Generating Station would come very near to his home and divide his property in half. He further alleges that he is concerned with the health hazards of living beneath high voltage transmission lines, with possible injuries to his family and horses, should

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noise and shock effects of the transmission lines scare the horses, and with the detrimental effect on the appearance of his neighborhood which the transmission lines would have. The NRC Staff agrees that these allegations are sufficient to demonstrate that Mr. Rentfro has met the interest requirement of 10 CFR §2.714.

II. CONTENTIONS

The following contentions are now advanced by the Petitioner and all other contentions previously advanced by the Petitioner are withdrawn. The NRC Staff agrees that these contentions should be admitted as issues in controversy in this proceeding.^{1/}

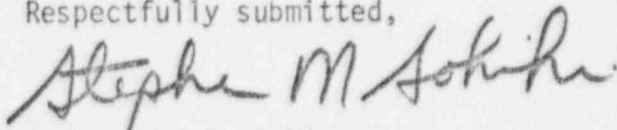
1. Transmission Corridor 1A should be relocated because the population within a one (1) mile radius of my home has increased from ninety-six (96) people in 1974, to over two hundred eighteen (218) people at this time. There are thirty-two (32) new homes and six (6) under construction. Two of the homes under construction are in the proposed transmission corridor and directly under the line. The area has grown rapidly and the trend appears to be accelerating.

^{1/}The agreement between the Petitioner and the NRC Staff goes only to the admissibility of the contentions under 10 CFR §2.714(a). The NRC Staff reserves the right to oppose the contentions on the merits at the upcoming hearings.

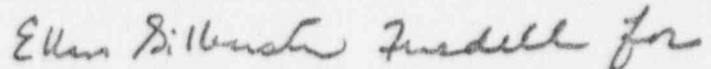
By relocating this section of the line .80 mile farther South, this population concentration could be avoided. The overall length of the line would be changed by less than two percent (2%) and no additional corner towers required. This route would be through open farmland with relatively few scattered homes. This alternative has not been adequately examined.

2. The Applicant has not adequately analyzed the potential health hazards associated with living in proximity to high-voltage transmission lines. Hearings on this subject are currently being conducted before the Pennsylvania Public Utilities Commission in the case of Winfred Higgins who has experienced considerable discomfort and mild electric shocks while living beneath a high-voltage line.

Respectfully submitted,



Stephen M. Sohinki
Counsel for NRC Staff



Wayne E. Rentfro
Petitioner

Dated at Bethesda, Maryland,
this 29th day of September, 1978.

NRC PUBLIC DOCUMENT ROOM
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION



BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
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(Allens Creek Nuclear Generating)
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STIPULATION BETWEEN NRC STAFF AND TEXAS PIRG

The petitioner, Texas Public Interest Research Group (Texas Pirg), and the Staff of the Nuclear Regulatory Commission (NRC Staff) have reached the following agreements with respect to the legal standing of the Texas Pirg to intervene in this proceeding and the contentions it has advanced.

I. INTEREST (STANDING)

The Texas Pirg has alleged that several named members live in the vicinity of the proposed plant and that they would be adversely affected by radioactive emissions from the proposed plant. The NRC Staff agrees that these allegations are sufficient to comply with the interest requirement set forth in the Commission's Rules of Practice; 10 CFR §2.714.

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II. CONTENTIONS

The following contentions are now advanced by the Texas Pirg and all other contentions previously advanced by the Texas Pirg are withdrawn. Unless otherwise noted, the NRC Staff does not object to the admission of the contentions now advanced and believes that they should be admitted by the Board as issues in controversy.^{1/}

1. The South Texas site is an obviously superior alternative to the Allens Creek site because:

- a. South Texas is already the location for two nuclear plants which are currently under construction and disturbing an unspoiled site is not justified;
- b. the cooling lake at South Texas is large enough to accommodate one more unit such as the proposed Allens Creek facility;
- c. constructing another nuclear facility at South Texas would involve significantly less land use than constructing the proposed facility at the Allens Creek site;

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The agreement between the Texas Pirg and the NRC Staff goes only to the admissibility of the contentions under 10 CFR §2.714(a). The NRC Staff reserves the right to oppose the contentions on the merits at the upcoming hearings.

- d. construction of an additional facility at South Texas will involve the use of significantly less water than will the proposed facility. Consumptive water use is a critical issue in Texas; indeed, the Legislature has required that ground water users in the Houston area convert to surface water to reduce subsidence, which is a major problem in this area;
- e. construction of an additional facility at South Texas would require less use of additional land for transmission lines than would the proposed facility; and
- f. the population density in the vicinity of the South Texas site is and will in the future be significantly less than that in the vicinity of the proposed facility. The residual risk to the public from operation of an additional facility at South Texas would therefore be less than that associated with the operation of a facility at the proposed site.

2. The smaller cooling lake size and changed location of the lake vis a vis the original proposal will render the lake useless as a viable recreational fishery because:

- a. the changed location eliminates the Bluff area as a recreational and fish spawning area;

- b. the amount of chlorine which will be released to the lake has more than doubled, which will result in significant fish kills;
- c. sewer discharges from Wallis, Sealy and the nuclear plant will cause an excessive algae growth in the lake;
- d. the heavy metal concentrations in the lake will result in heavy metals concentrating in the fish and will make them inedible;
- e. thermal shock will kill large numbers of fish during the winter when plant shutdowns occur;
- f. the ambient temperatures in the lake will be too high to support game fish in sufficient numbers to make the lake a viable recreational fishery; and
- g. the removal of fine screens and fish pass from the intake structures will increase fish kills.

3. A cooling tower is a preferred alternative to the proposed lake because:

- a. a cooling tower would require less prime land use than the proposed lake;

- b. the use of a cooling tower would save significant amounts of fresh water over the proposed lake. This consideration is especially important in the Houston area in light of the subsidence problem detailed in a separate contention; and
 - c. the cooling tower option, in addition to being environmentally preferable, is less expensive than the proposed lake.
4. Even if a cooling lake is approved by the Board, the Board should require that it be redesigned to be more of an environmental benefit and less of an environmental burden. Specifically, the dam (levee) should be extended northward to a point just east of its present NE corner so that the runoff can go into the lake and so that the north bluff area can be a viable fish spawning area.
5. Neither the Applicant nor the Staff have given adequate consideration to the combustion of solid waste as an alternative energy source, because:
- a. The Staff concludes on s.9-9 of the DS-FES that "the lack of demonstrated technology on a commercial basis eliminates the potential future energy sources from consideration as alternatives for central station power by the late 1980's," apparently including refuse

combustion among the "future alternatives." However, the evidence will indicate that the Staff has been inaccurate with regard to solid waste combustion. Twenty-one operational plants exist in the United States, with more than one dozen under construction, over forty in the advance planning stage, and over sixty in the feasibility study stage. Further, such facilities have operated successfully in Europe for over 40 years.

- b. The Staff states on 89-6 of DS-FES that solid waste generation plants should be used to "regain lost energy," but expresses doubt that such plants will be contributing electricity in the near future. The heat content of solid mixed municipal waste is approximately 5,000 BTU/lb. or 40 percent the value of coal. In waste processing systems, the removal of light combustibles and separation of non-combustibles like glass and metals yield a paper-rich fraction in excess of 10,000 BTU/lb. or 90 percent the heat value of coal. Among the 80 operating "waste-to-electricity" plants in Europe are plants in Amsterdam and Frankfurt which supply six and seven percent of their city's electricity needs, respectively. The assumptions of the Staff regarding the use of this option are therefore incorrect.

c. The six-thousand tons per day of solid waste in Houston are more than adequate to support a three-thousand ton per day conversion plant that would obviate the need for the proposed ACNGS; and this alternative is technologically, environmentally, and economically desirable relative to nuclear generation stations. (This option should be an issue at this hearing. Petitioner believes the solid waste of Houston can sustain 800-1,000 MWe of production; though this level of supply could not have substituted for the two-unit ACNGS proposal in 1975, it does become viable in comparison to only one unit. In addition, since July, 1975, 28 communities have begun feasibility studies for solid waste power generation, 14 new plants went into the planning stage, and two more plants became operational---thus suggesting an increased viability of this option during that time.)

6. Petitioner contends that the maximum credible accident has not been considered because the present safety and environmental analysis do not consider the effects of a large airplane crashing into the containment vessel. New information from FAA indicates that large plane traffic has increased at least 30 percent in the last three years, and will be several hundred percent higher before the plant is closed in about 40

years. Also, new airports have been proposed to be built in the Fort Bend County area much closer than present airports. This in conjunction with the heavy population density planned for the area east of the plant make it essential that the plant be moved much further away from population centers or, as a less inviting option, require that the plant containment be strengthened to withstand the crash of the largest plane that is allowed to fly in the Houston area. This can be done by roughly doubling the thickness of the containment vessel or still more cheaply by burying the plant for about a 5 percent increase in cost. [The NRC Staff opposes the admission of this contention to the extent it deals with intentional aircraft crashes and will discuss the basis for its opposition in a separate response.]

7. Energy conservation has not been adequately considered as an alternative to the proposed facility because:

- a. direct capital investment by the Applicant for conservation retrofitting in the service area has not been considered. Examples of reasonable retrofits are more effective insulation, sealing, more efficient lighting units, improved air conditioning maintenance, use of more efficient glass, and use of more efficient

industrial processes such as waste heat recovery. Expenditure of funds by the Applicant in the range of 50 percent that proposed for ACNGS would mean that the remaining demand for electrical power could be met with solid waste combustion as detailed in a separate contention;

- b. inadequate attention has been given to the likelihood that major industrial users in the Houston area will be producing their own energy in the near future. Texas City industrial complex, Dow Chemical complex and Bayport complex are presently considering such an option;
- c. the rate structure of the Applicant does not provide an incentive for energy conservation. Recent testimony before the Texas Public Utility Commission by Dr. Frederick Wells demonstrates the viability of altering the rate structure to significantly reduce power usage; and
- d. neither the Applicant nor the Staff has considered the increased use of "passive solar" techniques, such as architectural modifications and landscaping techniques that optimize the use of solar energy for residential and commercial structures.

Expended conservation measures as set forth above would mitigate the need for a large central power station such as ACNGS. This is especially true because:

1. Applicant's projections of power demand have decreased 22 percent in the period in which the proposed facility was deferred, and
2. reduced power production of a one-unit ACNGS vis a vis that of the original two-unit proposal can more readily be obviated by the measures outlined above.

8. Applicant has not demonstrated a design that will provide an adequate margin of safety, in the event of Anticipated Transients Without Scram. In that Applicant has no nuclear reactors operating at the present time, and therefore will not be drawing upon a pool of operators experienced in responding to transients, and since transients occur most frequently in the early stages of power plant life, ACNGS in the first few years of operation in particular will threaten release of radioactivity in excess of 10 CFR Part 100 guidelines. Therefore, Petitioner asserts that the license should be conditioned upon the incorporation of an automatic redundant scram in the ACNGS design. New evidence, in the form of an Electric Power Research Institute study and NUREG-0460, indicates that new reactor designs often have higher frequency of transients than older designs. ACNGS will be such a new design, BWR/6/. (Additional notes: studies by Peter Bourne and others confirm that experience mitigates adverse responses to stress conditions.) [The NRC Staff opposes the admission of this contention and will discuss the bases for its objection in a separate response.]

9. Petitioner contends that the Staff has inaccurately concluded in its NEPA evaluations that a nuclear power alternative is less costly, both economically and environmentally, than coal-fired generation. This contention is based upon the following factors:

- a. The operating experience for nuclear plants of this size indicates they will produce only half the power of their planned capacity, while coal-fired plants will produce at a 70 percent capacity. Furthermore, a comparison of two 375 MWe coal-fired units should be analyzed relative to the ACNGS, because smaller-sized units will be more reliable and thus require smaller reserve margins. This alternative would thus utilize less resources and be less costly. Studies by Kahn (1977) and Komanoff (Nuclear Power Performance and Update, 1976, 1977) provide evidence for this factor.

- b. Capital costs associated with coal-fired plants planned by other Texas Utilities are 40 percent less than those projected by the Applicant and Staff, and the prospects of utilizing Texas-mined lignite would substantially reduce the operating costs of the coal fire alternative. Both of these aspects would substantially alter the weighing process in Appendix S,D of the DS-FES.

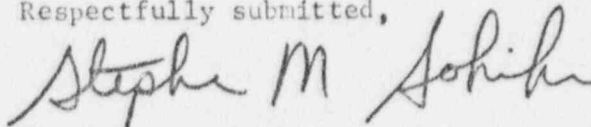
c. Research by Kahn (1977) indicates that peak-load central power units, such as small coal-fired units, will be more likely to encourage the use of supplemental solar heating and cooling units in the power grid. Since such solar units would result in environmental benefits and long-term economic benefits in the Applicant's service area, the base-load nuclear generating station represents an environmental liability relative to peak-load station alternatives.

Petitioner, therefore, asks the Board to find that coal-fired generation of power would be a preferable alternative to ACNGS. [The NRC Staff opposes the admission of this contention and will discuss the bases for its objection in a separate response.]

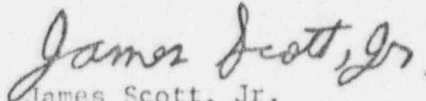
10. Applicant has not adequately demonstrated compliance with 10 CFR Part 50, App. A, criterion 31, with regard to intergranular stress, corrosion and cracking. Excessive oxygen levels, superposed loads, and residual stresses may result in ultimate failure of piping, despite altered metal content for the ACNGS design. The NRC investigation of stress, corrosion, and cracking problems at similar BWR units was released in December 1975. [The NRC Staff opposes the admission of this contention and will discuss the bases for its objection in a separate response.]

11. Applicant has not adequately assessed the effects of flow-induced vibration on jet pumps, spargers, fuel pins, core instrumentation, and fuel rods. Feedwater sparger failures occurred at five BWR units from 1975 to 1976, all due apparently to flow-induced vibration. Petitioner asks that a license be denied until an adequate assessment is presented by the Applicant. [The NRC Staff opposes the admission of this contention and will discuss the bases for its objection in a separate response.]

Respectfully submitted,



Stephen M. Sohinki
Counsel for NRC Staff



James Scott, Jr.
Counsel for Texas Purg

September 26, 1978