



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

LOCAL PDR

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

HOUSTON LIGHTING AND POWER CO.,

( Allens Creek, Unit 1 )

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Docket No. 50-466

May 12, 1979

ADDITIONAL CONTENTIONS OF TEX FIRG (AFTER APPEAL WON)

On April 12, 1979, the Board issued an order that allowed all parties and petitioners to assert any additional contentions that they might have advanced before but for the improper limitations on the prior contentions. The following are part of those contentions:

# 1 The Final Environmental Statement, even with its final supplement, for the construction of Allens Creek Nuclear Generating Station, Unit No. 1 does not meet the minimum requirements of the National Environmental Policy Act of 1969 nor does it meet the guidelines for EIS's set forth by the Council on Environmental Quality. In part this is because: (1) The scope of the project has been drawn too narrowly, i.e. the project and its EIS have been segmented improperly, because only some of the effects of one unit have been considered even though there are plans to have four (4) units at this same location. The Applicant has admitted that they plan at least two and eventually 4 units at Allens Creek. The water rights permit, the amount of land, and the size of the lake all indicate that more than one unit is being planned for, yet the environmental impact of only one unit has been planned for in the Applicant's Environmental Report and the NRC's Environmental Statement. That the total impact of all plants must be considered in one EIS is shown in the following Federal Court decisions: (a) Scientists' Inst. for Public Information v. AEC, 481 F.2 1097 (1973); (b) NRDC v. NRC, 547 F.2 633 (c) Aeschliman v. NRC, 547 F.2 622; (d) NRDC v. NRC, 539 F.2 824 (1976).

(2) Alternatives to the proposed action have not been properly nor sufficiently described as required by NEPA and its associated court decisions. See section 102(2)(C) and (E) of NEPA. In particular, the FES does not sufficiently consider alternative sites for the proposed plant, the effects on the people of the Houston area from a "core melt and steam explosion" at other sites, nor alternative ways to transport the pressure vessel reactor to each of the alternative sites. All these alternatives must be in one final EIS which is sent to others for comment and review. This requirement can not be met by evidence at the final public hearing.

(3) The FES and Supp. is not sufficiently detailed in that it delegates most environmental problems to further study instead of doing the required studies and putting the results in the EIS. When there is possible environmental damage the FES either states that "not enough data is available" or that "a study will be made" instead of doing the study so the results can be considered in the FES. Some of the many examples are (a) Chlorine discharges into lake (b) effects of heavy metals (c) ability of game fish to survive and thrive in the lake. Many federal court cases require answers before action: (A) Brooks v. Volpe, 350 F. Supp. 269, 279; (B) Montgomery v. Ellis, 364 F. Supp. 517, 528; (C) EDT v. Hardin, 325 F. Supp. 1401, 1403 (D) NRDC v. Callaway, 524 F.2 79 (1975). Therefore the present FES must be rejected and a new more complete FES prepared for comment and review before a construction permit can be issued.

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# 2 The alternative of using natural gas to supply the areas electricity needs has not adequately been considered. Recently it has been learned that there is an excess of natural gas in the country and in the Houston area. This is because deregulation and new technology like the reflection seismograph when used with the digital recording tape which allows much more accurate ways to locate the natural gas even at much greater depths. The federal regulations have an exception that allows areas with air quality problems, such as Houston, to keep using natural gas for boiler fuel. Recently the Texas Railroad Commission has withdrawn their Docket 600 order that required utilities to change from the use of natural gas. Huge discoveries of natural gas have been made in Mexico and Texas companies are now trying to buy it. Houston L & P has the experience to use natural gas and will use it now if artificial restrictions on its use and price are lifted as they now seem to be.

# 3 Game fish will not be able to live and propagate in the Allens Creek cooling lake in sufficient quantities to provide reasonable sport fishing. The EIS failed to determine the vertical distribution of water temperature in the cooling lake. When this is done it will show that even for one unit that during the summer months the water will be too hot for game fish to live in the upper few feet where there is sufficient Oxygen for fish to live. This is shown in performance reports by the Texas Parks and Wildlife Dept. for both Lake Livingston and Lake Conroe, as well as in the FES by NRC for the Blue Hills nuclear plant near Jasper, Texas.

# 4 The use of the planned "once-through" cooling system for Allens Creek nuclear plant by using the water from Allens Creek cooling lake (not pond) will be in violation of PL 92-500, sections 301, 306, and 316. This is true despite the Appalachian Power Co. case concerning these sections of the Clean Water Act, 545 F.2 1351, and any past permits given by either the Texas Dept. of Water Resources or EPA. The Clean Water Act defines heat as a pollutant, and says that its discharge can be unlawful. Section 316 of the act provides that heat can be discharged if it does not affect the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on that body of water (Allens Creek Lake). It is clear and admitted that even one unit will prevent game fish from propagating. To the extent that EPA has not set rules and regulations to carry out the law, that only means that EPA has not followed the statute, and not that the NRC or Applicant is excused from following the law.

# 5 There has been no showing of the need for the Allens Creek nuclear plant. The Applicant has not even obtained the required permit to build or operate the plant as required by state law. The state Public Utility Commission may issue Certificates of Necessity and Convenience after public hearings that show the need for the plant. The Applicant did not make this showing but instead improperly claimed that they had already "started construction" even though they some two years later have still not even obtained a construction permit by the NRC. It would have been illegal to have even started "site preparation" without a permit from the NRC. Clearly no further NRC construction permit proceedings should even be carried out until the proper proceedings and showing for the need for the plant have been completed at the state PUC.

# 6 There is no need to build any more nuclear plants in the free world. Therefore there is no need to build Allens Creek. By increasing energy productivity (making its use more efficient) it is possible to reduce energy consumption by 40% (Technology Review, Feb. 1977) without any change in lifestyle and without any increase in the total costs of energy services (because less consumption savings would pay for the measures to raise productivity). The Subcommittee on Energy of the Joint Economic Committee of Congress published details of study on conservation on August 31, 1977. It shows that huge amounts of energy are now wasted that the utilities could help save i.e. replace electric heating in homes, increase efficiency of air conditioning, reduce heat loss by insulation, cogeneration, improve housekeeping in industrial plants, burn trash. Whole story can be found in paper by Vince Taylor, Energy: The Easy Path, published on Jan. 1, 1979.

# 7 Both the natural draft and the mechanical draft cooling towers are superior to the cooling lake because: (a) They use much less scarce farm land and fresh water; (b) The cooling lake is not a recreation benefit; (c) the applicant is now planning mechanical draft towers for their large coal plant in Fort Bend County; (d) The use of the cooling lake is contrary to the Clean Water Act. The above includes new evidence and changes in the plant design.

# 8 Natural gas, coal, lignite, and oil are all both environmentally and economically less costly than the use of nuclear power in the Houston area. This is because: (a) All of them are more available than uranium which is largely mined outside the U.S.; (b) There is only about 20 years supply of uranium at projected use rates so 20 years use of an expensive nuclear plant will be wasted; (c) The cost of the safety equipment necessary to make nuclear power safe makes nuclear much more expensive than the other sources of power; (d) The three mile island accident showed the world what we all knew, namely that nuclear power plants can have large accidents that would cause more environmental damage to people than all the sulfur dioxide damage of the last 100 years; (e) the rejection of the WASH-1400 report shows that we don't know how often these accidents will happen in the future.

# 9 The applicant will not be able to meet the EPA standard for the uranium fuel cycle (40 CFR 190) at the site boundary. For example, the direct radiation from the plant alone when added to the other radiation from the plant could exceed the standard even without accidents. With accidents and other sources such as transportation the standard can't be met with the present or any reasonable design.

# 10 The Applicant can not meet the regulations required by 10 CFR 50 Appendix E and 10 CFR Part 100 because: (a) The reactor proposed is much larger than those considered when the regulations were made; (b) The reactor is of a new, untried, untested design such that there is no operating experience to show how safe it is; (c) the plant is expected to normally release much more radiation than most plants (about 33,000 curies/year); (d) the Houston area is the fastest growing area in the country and most of this growth is projected for the area immediately east of the proposed plant such that during the later stages of operation of the plant much more than 500 people per square mile will live within 30 miles of the plant and urban areas

will be next to the plant;(e)the traffic is already so heavy that it would be impossible to evacuate even a majority of the people that could reasonably be expected to be affected by the radioactive steam cloud caused by the maximum design based accident. The traffic is expected to get much worse within the next decades, and the maximum credible accident that the public should be protected against is much worse than the design based accident .(f) The state of Texas does not have a NRC approved evacuation plan and even the states with approved plans could not prove that they could effectively protect all the people affected by the radioactive cloud. (g) the Houston area has frequent rains that would greatly increase the danger to the public from the greatly increased "fallout";(h)because of the above rain caused fallout the applicants proposed exclusion area, and low population zones are not large enough to meet NRC requirements;(i) because of the very large Houston population now and the much larger one projected for 2020 the population center distance should be much more than the 1 1/3 X normally used.

# 11 The applicant can not devise a plan to protect the public's health and welfare against either internal nor external sabotage. This is shown by the several acts of sabotage that have recently taken place such as that at Surray, Va., Argentina, and France. Studies have shown that only a few armed people can enter the reactor control room even without inside help. As opposition to nuclear power increases it will be easier to get employees to help with the sabotage. The construction permit must at least show that it is possible and feasible to protect the plant against at least one inside and five outside people intent on destroying the core of the plant.

# 12 The NRC fails to follow the Atomic Energy Act's requirements to protect the public's health and welfare and NEPA's requirements to protect the environment when it limits the magnitude of the accidents that can be considered to the "design basis accidents" that it has considered in the past. The Three Mile Island accident, which involved a series of failures, and the BORAX BWR explosion in 1954, and the power excursion accidents and others described by Richard Webb in his book entitled "The Accident Hazards of Nuclear Power Plants" all show that it is certainly possible even likely that accidents like those described in the WASH-740 Update report can happen.

# 13 The FES does not consider the effect of the on-site storage of spent fuel rods on the public health and safety and the environment. Since there are no operating reprocessing plants and no permanent storage facilities for high level spent fuel, the waste will have to be stored in the "swimming pool" at the site. Since it is designed for less than 5 years operation, the plant will either have to stop operation or expand its on site storage facilities. Neither option has been covered in the FES. Neither has the effects of a meltdown at the spent fuel pool. The German study, Working Report #290, shows that the fuel pool melt down is about as bad as the reactor core meltdown.

# 17 The Atomic Energy Act is unconstitutional to the extent that it regulates at the federal level and prohibits the states from



protecting their citizens under the "police power" of the states. This is especially true in the case of Allens Creek which would not be interconnected to any out of state utilities so that it would not affect interstate commerce. Therefore it is unconstitutional for the federal government to limit insurance coverage on the Allens Creek facility damages or to prohibit the State of Texas from setting tougher safety regulations than the NRC. The power is in the People.

# 15 The environmental impact of radiation exposure to the workers of the Allens Creek plant has not been properly considered. This is because the radiation exposure to the workers increases the longer the plant operates. The GESMO Report of 1976 estimated the occupational exposure from light water reactors at 570 man rem/GW(e) year. Yet the measured exposure has been recorded as about 3 times this rate after only about 7 years operation. See Feb. 1979 article in Nuclear Engineering International at page 36 entitled "Radiation exposure in LWR's higher than predicted". The problem is shown to be especially in BWR's such as Millstone, Nine Mile Point, Oyster Creek, and Pilgrim.

# 16 The town of Wallis should be considered as the population center because of the expected rapid growth in the area. The addition of the nuclear plant and the large intercontinental airport near the plant will cause the Wallis population to exceed 25,000 by the year 2027.

# 17 The rupture of the six-inch liquid petroleum gas pipeline could cause a cloud of explosive gas to travel along depressions to the area of the plant before exploding with such force to damage the safety equipment at the plant and the workers at the plant. For this reason either the pipeline or the plant must be moved.

# 18 The soils at the Allens Creek site are not suited to support safely the heavy reactor building. If the reactor sunk 18 inches as the South Texas reactor already has then it would rupture the pipes that connect it to other lighter buildings at the same site.

# 19 The Safety Evaluation Report and its two supplements are not sufficient nor complete because they are not understandable by the public whose safety and welfare is under consideration. This is largely because nearly every sentence refers to another document which is not attached. Neither are these documents located at the local reading room nor will the NRC send them all to the parties. Instead the affected public is asked to go to Washington, D.C. or to trust the federal government agency to protect them. Neither option is very comforting. For this reason of fundamental due process, the safety hearing should not take place until all documents referenced in the safety Evaluation Report or its supplements have been sent to each party and placed in the Houston Public Library.

# 20 The computer program used to calculate the stresses on the reactor and containment during the design basis and safe shutdown earthquakes is defective because it subtracts forces when they should be added and because it used the  $\sqrt{\text{sum of squares}}$  method to add forces when the actual sum should be used as a worse case.

# 21 Neither the Applicant nor NRC have shown that the majority of the evidence indicates that the GE ECCS system will work sufficiently to protect the public health and welfare by the time the plant starts operation. No full scale tests of the system have been completed and the computer code used to estimate its behavior has failed to predict even the simple test results.

# 22 The control room design and the post-accident display instrumentation for the Allens Creek plant are not sufficient to insure that the operators can safely control the plant under all accident conditions. As at Three Mile Island the operator may make one or more critical mistakes because of defective instruments or their location in the control room.

# 23 The calculated releases of gaseous effluents from Allens Creek is underestimated by almost a factor of ten(10) in the Table 11.2 of Supplement No. 2 to the Safety Evaluation Report.

# 24 Many of the safety features or components which have not yet been shown safe nor properly designed for the Allens Creek plant can not be proven safe nor suited for the plant within the time before completion of construction. This is especially true for all components and systems that will not have actually been tested in a full scale reactor of similar design under at least design basis accident conditions. **No** construction permit should be granted until such a showing has been made.

# 25 The Applicant is not technically qualified to design and construct the proposed facility because: (a) They never have designed an operating nuclear plant that has a record of safe operation; (b) The S. Texas facility has had a poor record during its construction period. Without any public opposition the construction of the plant is over two years behind and the expected cost is double that forecast by the applicant a short 3 years ago. (c) The Applicant and its prime contractor, Brown and Root, have shown a poor attitude toward safety and quality control. Safety inspectors are afraid to properly inspect the work and components because some have been killed or fired from their job. A law suit has been filed over this and it has been in the newspapers. (d) The reactor has already sunk 18 inches, one foundation was over one foot from its planned location, they use former prisoners and illegal aliens on the job, and voids have been found in the poured concrete.

# 26 The Applicant has not reasonably estimated the costs nor is it financially qualified to design and construct the plant because: (a) Its past history of estimating costs for the S. Texas plant is very poor, and it has not yet accounted for the cost of new safety regulations that the Three Mile Island accident and this intervention is going to cause. (b) Increased awareness of the public to high rates for electricity and the contribution of nuclear power to those high rates will prevent the Applicant from getting the rate relief that they desire; (c) A decrease in the earning per share for 1978, expected decrease in sales of electricity because of decreased home building and decreased industrial expansion because of the gross air pollution in the Houston area and the Federal Clean Air Act and the expected increase of enforcement of the act by state, federal, and citizen suits will all cause the Applicant to have excess capacity even if they do not build Allens Creek. Today the TVA announced they were dropping plans to build three(3) nuclear plants because of excess capacity.

## CONTENTIONS

17. TexPIRG contends the plan to place heavy metals (for example, Cadmium, Chromium, Copper, Manganese, Lead and Zinc) from the Allens Creek Cooling pond in the Brazos River will adversely effect the proposed Baytown Mound Strategic Petroleum Reserve (SPR) in Freeport, Texas. Page 2.2-1 of the SPR Final Environmental Statement (June 1978, DOE/EIS-0021) and the "Executive Summary" of Appendix G of that same document show reliance on the Brazos for "compensation water" to make negligible the impact of "discharge heavy metals" during pump out of the SPR salt domes, and that raw water from the Brazos would be used to displace stored oil from the SPR site when oil shortages occurred and the oil was needed. Petitioners interests will be harmed:
- a. Because there will be higher fuel costs due to contamination of the stored oil by use of Brazos River Water containing ACNGS heavy metals, and:
  - b. Addition<sup>al</sup> heavy metals in the recreational lake due to holdup of heavy metals to avoid contamination of SPR oil will render it less usable for recreation, and:
  - c. Additional heavy metals for fish and other aquatic animals at the site of the SPR infusor in the Gulf of Mexico will degrade the quality and safety of such animals for food and waters of the Gulf for many recreational and other purposes.
18. Petitioner contends that Applicant should be required to meet the requirements of Regulatory Guide 1.60 by equipping this plant to protect the reactor against earthquakes as high as VII on the modified Mercaldi index. Staff and Applicant's treatment of 1891 Rusk, Texas, earthquake (See: SER 2-42) does not protect petitioners health interest sufficiently. From the newspaper accounts of the events, it cannot be assumed it is safe to set a Modified Mercaldi Index of VI as the safety standard against earthquakes for the plant because it is likely only poorly constructed or aged chimneys fell during the reference event.

Petitioner maintains using the Bonham Event of 1882 to establish the Safe Shutdown Earthquake at M.M. VI, ignores the fact that Bonham is in a different geological area than Wallis.

In addition, petitioner argues that data\* showing increased earthquakes of small intensity with epicenters near a newly constructed dammed lake in Virginia, is great evidence that earthquakes may be stimulated by the weight of large bodies of water such as the proposed Allens Creek recreational lake.

\*Data is presented in Hearings before the Senate Environment and Public Works Committee, "North Anna Nuclear Power Plant" 95<sup>th</sup> Congress, 1st Session, October 13, 1977., Pg. 207.

29. Petitioner contends the health and safety interests of its members will not be protected by having two portable hydrogen recombiner units, one of which is actually at the South Texas Nuclear Project in Bay City, Texas. The Three Mile Island occurrence showed that the recombiner there was possibly very important, (See: April 3, 1979 Distribution of Board Notification - Nuclear Incident at Three Mile Island, "Immediate Preliminary Notifications for March 28 and March 30, 1979". This incident indicates combiners are needed on an emergency basis, and need correct lead shielding. Two combiners and lead shielding in place at ACNGS would provide the "active redundancy" considered important in Section 6.2.5 of the Supp. #2 of the SER. Petitioner seeks that Applicant be required to provide greater protection than required by Regulatory Guide 1.7.
30. Applicant's decision not to use water sprays to maintain the charcoal adsorber material below ignition temperature is an unwise shortcut on the safety of petitioner's members health and economic interests. A fire in these filters following a DBA would result in release of radioactive iodine and other dangerous substances. No reason is given for removing a system recommended by a Regulatory Guide, nor is there likely to be any way to enter the containment building and spray these filters following a Design Based Accident or unexpected accident. Other accidents do occur, such as Browns Ferry, 1975, and the retention of this system offers protection against fire, a conceivable situation around a power plant because of high temperatures in various places of the operation continually or randomly.

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31. Intervenor seeks intervention to prevent construction of the gaseous radwaste system because it will have insufficient physical space, accessibility and other convenient features to allow modification without long-term power outage or other costly delays, such as construction of a new radwaste system. These modifications may be required by changes in the regulations limiting the amount of radio-activity released to unrestricted areas. This is not a challenge to regulations, but an attempt to have the plant gaseous radwaste system capable of smooth modifications in the event of changes in the regulations.

The basis for arguing there is likely to be changes in the regulations are:

1. On two occasions, the National Commission on Radiation Protection (or its equivalent bodies) has lowered its "safe" dosage limitations.
2. H. H. Rossi, former president of the American Society of Radiation Physics, recently proposed an upward revision of the "Q" factor (quality factor) which will increase the calculated rems received by Intervenor's members. (Rad. & Envir. Biophys., 14, 275-83, 1977).
3. Karl Z. Morgan, former head of the Health Physics Division of Oak Ridge National Laboratory (Union Carbide Corporation) urges that agencies "consider the possibility of reducing it (the regulation limiting dosage of radio-activity to the public) by a factor of two." (Bull. Atomic Scientists, 34(7), 40, Sept, 1978.)
4. The recent Three Mile Island incident may press Congress into lowering these standards.

Items (2) and (3) above are not studies but conclusions of persons who have played a role in the formation of current standards.

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31. Petitioner contends the ACHGS control rod drive system is a hazard to public (and its members) safety because General Electric Designed control rod systems have had defective float switches which failed to function in their scram discharge volume tanks (SDVT). These switches activate the outflow of these tanks. If they fail to float, the SDVT will not empty. In the event of SCRAM, while the SDVT is filled with water, water from the hydraulic CRD system cannot escape and permit the control rod to be driven into the core as designed, because the rod's progress is slowed. From 1972 to 1974 this failure was noted at Hatch - I, Peach Bottom -III, Duane Arnold Energy Center and Fermi-2.
32. TexPIRG contends the Staff's conclusion that ACHGS may be operated without endangering the health and safety of the public is premature with regard to reactor vessel materials. If the reactor is installed as planned now, resolution of generic issue A-11 will not be enforceable without such major disruption to service to make the plant virtually totally rebuilt. We contend that the process of embrittlement of the reactor vessel is not understood sufficiently well to justify the Staff position and that construction of the reactor vessel should not be started until the A-11 generic resolution is reached. In 44 Federal Register 18513, the NRC states it is considering amending its regulations specifying fracture toughness in 10 CFR 50, Appendix G.
34. TexPIRG contends that the Applicant monitoring of in containment building events during LOCA or similar events is not adequate to detect immediately the occurrences of hydrogen explosions. That the recent Three Mile Island incident shows that current approved containment building monitoring apparatus did not bring such an event to the attention of operators immediately, and that therefore the strong possibility existed that actions which would prevent a second hydrogen explosion were not taken. There is danger that hydrogen explosions will endanger TexPIRG members because the containment building during a LOC is likely to contain radio-active gases which would be

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released from the building damaged even lightly by the explosion and in excess of 40 CFR 190 or 10 CFR 20.

35. Applicant's relief valve system against over-pressurization is based on an analysis that is too close to ASME Boiler & Pressure Vessel Code allowable upper pressure limit for public safety. Although applicant and staff maintain recirculation pump trip will bring some pressure relief, the assumption of relief valve performance at ACNGS does not take poor performance of radiation monitors which signal high flux and actuate the pressure relief valves <sup>INTO ACCOUNT</sup> Nuclear Safety 19(1), 1978, pg. 82, shows 17 "Reportable Occurrences" for 1976 with such instruments among 22 BWR's, and Nuclear Safety, 20(1), 1979, pg. 84, shows 36 such reports among 23 BWR's. The fact the high flux signal system is conservative to the high pressure signal is not significant if there is a high flux signal failure. Petitioner contends redundancy of signal systems is preferable.

36. Petitioner contends that the Staff & Applicant has not satisfied requirements for the Atomic Energy Act of 1954 to protect the health and safety of the public by failing to adequately demonstrate that the public can be evacuated from the Houston area in the event of a maximum credible accident at ACNGS as required by 10 CFR 50, Appendix E. There is evidence that mass evacuation may be required from the site in view of the incident at Three Mile Island. The Board in its partial initial decision stated that the possibility of an accident was "exceedingly small" ( 2 NRC 792, LBP-7666), without dealing with what to do when the "exceedingly small" is the event of the day. At this time, Applicant has not developed in the PSAR those requirements under, "II The Preliminary Safety Analysis Report", of 10 CFR 50, App. E. Applicant should be requested to do so before the Construction License hearing. Petitioner should be granted the right to review and raise questions concerning Applicant's plan before the Board, and before a Construction License or Limited Work authorization is granted.

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# CONTENTIONS

37. Petitioner contends applicant's charcoal adsorber beds in the off gas system need additional safeguards to prevent incidents such as the explosion and fire at Browns Ferry Unit 3, in July, 1977. These include addition of a third hydrogen analyzer to back-up the first two, a nitrogen-suppression system sufficient to blanket all charcoal beds, another power supply to the hydrogen analyzers and modification of the analyzers to fail high on equipment malfunction.
38. Petitioner contends there are cancer prone individuals who should be screened out<sup>of</sup> either permanent or transient employment at ACNGS. These are persons with a history of radiation treatment, asthma, exuma, uriticara, and pneumonia. There is no screening planned for them by Applicant or Applicant's contractors. Petitioner contends its members may become such workers, or that its member's family members may become employed without such screening. Applicant should agree to such a screening process.
39. Applicants spent fuel pool cooling system is not adequate. The use of the RHR in parallel with spent fuel cooling system is hazardous, because this system is needed for long periods in event of main cooling system failures. Thus, there is no redundancy in a cooling system for fissioning material. Intervenor contends that an additional system should be available to cool the spent fuel pool in the Fuel Handling Building and the fuel pool in the containment building (at Elev. 138.83').
40. Intervenor asserts the reactor coolant pipe while designed to rupture at 1,250 p.s.i. actually has a "safety factor" of 2.25 such that it could be expected to withstand pressure of 2,700 p.s.i. When this knowledge is combined with a situation of either turbine trip or MSIV closure and failure of the recirculation pump to trip, this "safety factor" becomes a hazard to Intervenor's members safety interest because at 2,700 p.s.i. the possibility of reactor vessal burst arises. This intervenor contends it is superior for the pipe to be able to burst under these conditions than the pressure vessal because the ECCS can mitigate, where a burst vessal would spray out water and contents<sup>and</sup> lead to fuel melt. Applicant should be required to show its coolant piping is not stronger than the core containment vessal.

41. Petitioners contend they will risk economic injury unnecessarily if the plant is constructed without a better survey of growth faults in the site area. This can be done by having Applicant set piers or surveyors bench marks outlining the perimeter of the reactor containment building and the fuel handling building and to have these benchmarks surveyed periodically over a time interval of not less than 24 months. This should be done because growth faults shift bridges and crack foundation slabs in the vicinity of ACNGS and the extent of the effect of these faults should be known as much as possible either prior or during construction to make possible steps to prevent compromising the integrity of these two parts of ACNGS.
42. Intervenor contends Applicant and Staff have not considered adequately the use of natural gas for fuel in a generating station. On Page 1 of the April 24th "Energy Insider", a Department of Energy" publication, Deputy Administrator Hazel Rollins of the Economic Regulatory Administration, indicated there are estimated to be available one-half trillion cubic feet of natural gas, because of improved seismic and holographic exploratory techniques for gas at 30,000 feet or more. Another reason for the plethora is deregulation of inter-state shipment, which has increased profit for transmission operators. TexPIRG contends the Final Supplement to the FEIS was published too soon to consider this development, but that it should be allowed to present testimony on the current and future availability of natural gas to fuel a non-nuclear unit for Applicant.
43. This Intervenor contends that failure to construct the off-gas system charcoal delay tanks to withstand the design basis tornado missile constitutes danger to Intervenor's health interest in the proceedings because in the event of tornado missile penetration of these tanks radio-active materials in decay will be dispersed. Applicant lists no basis for its conclusion a "small fraction" of 10 CFR 100 dose guidelines will be dispersed. We contend applicant must demonstrate that this is so, and that failure to provide such seismic protection is within "as low as is reasonably achievable" guidelines.

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CONTENSIONS - TexPIRG

45. TexPIRG contends the ACHGS is a hazard to its members health and safety interests, because its radio-active emissions may confuse electronic guidance systems in airplanes in the general vicinity. A B-52 military plane crashed within 2 miles of a nuclear plant near Charlevoix, Michigan, in January 1971 (its cause was never released) and a light plane crashed in fog on August 25, 1972 at the Millstone Power Station. We have previously contended (TexPIRG #6, accepted Feb. 1979) that airplane traffic will increase in the ACHGS area, and seek to add testimony on the guidance system "latching" phenomenon and the danger it imposes on public safety.
46. Intervenor contends relief valves in event of blowdown initiated by many circumstances have not always closed as anticipated due to many causes. Leaks were recently reported at Three Mile Island, Unit-2, 3/28/79; Browns Ferry, Unit-3, 4/25/77; Davis-Besse, 5/11/78 (Fisher Valves); Dresden, Unit 2, May 1975; and Hatch Unit-1, 5 times in 1977. Intervenor further contend that reduction from 22 to 19 relief valves increases the danger from failure of any single relief valve or more than one relief valve. Applicant should be required to research all data on such valves, and:
- a. Commit to the use of one type with best record of performance during blowdown conditions, or;
  - b. Use a variety of manufacturer's products to prevent common mode failure
47. Intervenor maintains Applicant should commit to a system that permits taking of a primary coolant sample when the containment building is dangerously radio-active, such that no workers can enter. This was one of the information problems at Three Mile Island, where during emergency conditions caused by an ECCS the utility operating the plant was unable to assess how much fuel damage had occurred. Intervenor contends lack of this knowledge made some options appear possible when they might have been hazardous or even had severe consequences if attempted. Such a system would remove some of the uncertainty likely to occur in the event of an ECCS.

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CONVENTIONS - TEXFIRG

48. This Intervenor contends applicant should commit to a system to ascertain accurately how much non-condensable gas is in the reactor vessel, to assist in estimating the possible explosion hazard in the vessel during an ECCS. The need for this information was demonstrated at Three Mile Island, Unit-2 during its recent incident. Petitioner contends inability to know accurately the amount of non-condensable gas in the reactor increases the chance of an explosion and damage to the fuel geometry ~~by~~ physical breaking of fuel rod clad.
49. Petitioner contends water level indicators have proved unreliable recently in pressurizer (Three Mile Island, Unit-2 3/23/79 and reactor vessel (Oyster Creek, 5/2/79.) and represent potential danger by causing operator error. In a Main Steam Isolation Valve closure followed by SCRAM, the resulting power drop will produce smaller bubbles in the core with a drop in water level. If the water level indicator stuck on low the operator would naturally increase the feed-water pumpflow which could easily lead to overflow and water hammer in the steam line. Applicant should be required to develop methods to prevent water level indicators stimulating operator errors, and submit such plans at the construction license hearing.
50. In the event of steam line break, rapid depressurization of the reactor vessel would take place resulting in frothing of the core steam bubbles and drawing of coolant water into the reactor. The movement of this water will cause an increase in reactivity before the SCRAM system will be effective. The reactivity insertion constitutes a danger to petitioner's health and safety because of the danger of fuel melt following such a power excursion. Petitioner contends Applicant must demonstrate the SCRAM system will function rapidly enough to prevent such increase in reactivity.

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