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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY & LICENSING BOARD

In the Matter of

LOUISIANA POWER & LIGHT COMPANY

Docket No. 50-382

(Waterford Steam Electric Station  
Unit 3)

Operating License  
Application

JOINT PETITIONERS' ARGUMENTS  
REGARDING CONTESTED CONTENTIONS

I. Introduction

Joint Petitioners', Save Our Wetlands, inc. (SOWL) and Oystershell Alliance, Inc. (Oystershell) herewith submit their written arguments in support of the contested contentions numbers 8, 9, 10, 11, 12, 13, 14 (redrafted), and 22 as stated in the joint submission of counsel filed separately in these proceedings, in response to the Safety and Licensing Board's directions in the Special Pre-Hearing Conference of Thursday, April 26, 1979 (hereafter described as The Conference) (See Pages 110-111).

II. Joint Petitioners' position regarding contentions.

A. Requirement of specificity and basis

Part 2.714(B) of the Commission's rules and regulations state in pertinent part that "...the petitioner shall file a supplement to his petition to intervene which must include a list of the contentions which petitioner seeks to have litigated in the matter, and the bases for each contention set forth with reasonable specificity." See 50 CFR 2.714(b). As a cursory reading of the transcript of the special preliminary conference of April 26, 1979 and the Nuclear Regulatory Commission staff's response dated April 25, 1979 makes abundantly clear, the principle objection advanced both by the Nuclear Regulatory Commission staff and applicant, Louisiana Power and Light Company, revolves around the joint petitioner's alleged lack of basis and

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specificity in connection with the individual contentions which are the subject of this memorandum. With that in mind, joint petitioners' believe that it is instructive to review the standards by which the submitted contentions are to be judged. In this regard, the understanding of the Congressional Committee exercising oversight of the activities of Atomic Energy Commission (the predecessor to the present Nuclear Regulatory Commission, from which this Board receives its charter) is instructive. From the hearings before the Joint Committee on Atomic Energy, 90th Congress, 1st Session, we find the following:

"While the term 'contentions' is not defined in the Commission's rule of practice, ...the statement of contentions is analogous to good pleadings in civil cases, i.e., the allegations must be reasonably specific. ...the requirement of reasonable specificity should be strictly enforced to avoid nuisance interventions." See Licensing and Regulation of Nuclear Reactors, Hearing before the Joint Committee on Atomic Energy, 90th Congress, 1st Session, Part 1 at p. 471 (1967).

Also instructive is the ruling of the Safety and Licensing Board statement in TENNESSEE VALLEY AUTHORITY (Brown's Ferry Nuclear Plant Units 1 & 2, Docket Nos. 50-259 and 50-260) to the following effect:

"It is true that the Board is under no obligation to affirmatively 'create' contentions for petitioners or to transform patently bad contentions into acceptable contentions. (citation omitted) However, we believe that where an issue, clearly open to factual adjudication, can be discerned somewhere within the four corners of the submitted pleadings the Board is not free to disregard it." See TENNESSEE VALLEY AUTHORITY, op. cit., 3 NRC 209 at p. 221.

Finally, but by no means of less importance are the U. S. Supreme Court's observations regarding intervenors contentions in last year's decision of Vermont Yankee Nuclear Power Corporation v. Natural Resources Defense Counsel, 98 S. CT. 1197 (1978) (hereinafter referred to Vermont Yankee). In order to be acceptable a contention must conform to a "threshold test" See Id., p. 1196, which Justice Renquist described in the following manner:

"We think the Court's criticism of the Commission's 'threshold test' displays a lack of understanding of the historical setting within which the

agency action took place and of the nature of the test itself. In the first place, while it is true that NEPA places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action, it is still enumbent upon intervenors who wish to participate to structure their participation so that it is meaningful, so that it alerts the agency to intervenors position and contentions.

"...Comments must be significant enough to step over a threshold requirement of materiality before any lack of agency response or consideration becomes of concern. The comment cannot merely state that a particular mistake was made; it must show why the mistake was of possible significance in the results..." Citing Portland Cement Association v. Ruckles House, 158 U. S. App. D. C. 308, 327, 486 F.2d 375, 394 (1973), cert. denied subnom. Portland Cement Association v. Administrator, EPA, 417 U. S. 921, 94 S. Ct. 2628, 41 LED 2d 226 (1974)." See Vermont Yankee, Id., pp. 1196-

1197.

Of further importance was the Supreme Court's approval in Vermont Yankee of the Commission's description of its responsibilities regarding the acceptability of contentions to the effect that "We do not equate this burden with the civil litigation concept of a prima facie case, an unduly heavy burden in this setting. But the showing must be sufficient to require reasonable minds to inquire further.", Id. at p. 1197.

Joint petitioners' submit while it is appropriate for this Board to require that joint petitioners' reach the "threshold requirement of materiality," that applicants and the NRC staff have sought to place a far more substantial burden upon the contentions than that of either a showing sufficient of requiring reasonable minds to inquire further, or in the alternative an issue to factual adjudication discernable within the four corners of a pleading. Thus joint petitioners' will show that their contested contentions have managed to rise from the mire of total amorphousness, at least to a level of giving some substantial notice of the potential of development of a material issue.

#### B. Burden of Proof Regarding Contentions

Joint petitioners' also note that a substantial amount of time has been directed towards attempting to require a defense of the thesis advanced in each of the contentions. It is respectfully submitted that such a view on the

part of the Board would not be consistent with either the Commission's regulations or the decided holdings concerning the position of intervenors. Part 2.732 of the Commission's Rules of Practice state that "Unless otherwise ordered by the preceding officer, the applicant or the proponent of an order has the burden of proof." Thus it has been held that "the Atomic Energy Act intends the party seeking to build or operate a nuclear reactor to bear the burden of proof in any Commission proceeding bearing on its application to do so, including a 'show cause' proceeding." See CONSUMERS' POWER COMPANY (Midland Plant, Units 1 & 2) ALAB-315, 1 NRC 101 at p. 105 (1976). This same result was approved by the U. S. Court of Appeals for the D.C. Circuit in York Committee For A Safe Environment v. U. S. Nuclear Regulatory Commission, 527 F. 2d 812 (C.A., D.C. CIR., 1975). In the York Committee decision, the court observed by way of a footnote that "Petitioner's suggestion that there might be harmful cumulative chemical effects which the Licensing Board should take into account did not make them proponents of an order." ... "We agree with petitioners that this allocation of the burden of proof is unjustified." See York Committee, Id., at p. 816, Note 13. Based upon these holdings, joint petitioners respectfully submit that it is incumbent upon the applicant or the Commission in seeking to set aside the contentions of joint petitioners rather than for joint petitioners to be required to sustain the viability of their asserted contentions, presuming of course that, as a matter of law, these contentions have passed across the "threshold test".

#### C. Analysis of Contentions

CONTENTION NUMBER 8. Applicant has failed to properly evaluate the health and environmental effects from existing industrial, petrochemical, manufacturing and background sources of pollution operating in combination

with low level radiation introduced into the environment by operation of the Waterford 3 facility.

As counsel for joint petitioners stated at the Preliminary Conference the lower Mississippi River Valley has one of the nation's highest cancer rates and the rate is growing rapidly. Support for this is found in the following Associated Press dispatch appearing in the New Orleans Times-Picayune, a copy of which is attached as Exhibit A; Baton Rouge, Louisiana (AP)" -

The Mississippi River and Gulf Coast Areas where crude oil is turned into gasoline, plastics and other products may have the nation's highest cancer rates before 1985 a federal scientist says.

"New Jersey now ranks as the Number 1 Cancer State, but we suspect that the petro-chemical area along the Mississippi River and along the Gulf Coast will nose out New Jersey for the Number 1 spot within 5 years because it is growing at a much more rapid rate," said Eugene Sawicki.

Sawicki, an analytical chemist for the Environmental Protection Agency said the EPA ran a preliminary study in the Baton Rouge area to check for a possible link between cancer and chemical plant emissions.

"We came to Baton Rouge because it is growing industrial area where they keep adding new petroleum industries and new chemical companies," said Sawicki, who was project manager for the study.

He said the checks of the air in Baton Rouge and Geismar during a three day period in 1977 found four chemicals known to cause cancer and five suspected of being carcinogens.

Most, he said, were substances called halogenated hydrocarbons.

"If you look at the known cancer "bad boys," at least 50% of them are halogenated hydrocarbons," Sawicki said.

"What our findings in the Baton Rouge area indicate is that the area needs much more study," he said.

"The EPA report emphasized that the process of tracking down, separating and identifying airborne cancer-causing chemical compounds is in its embryonic stage. And there is even less known about how much of the total chemical mix in the air is necessary to cause a given type of cancer."

The report goes on to indicate that in Orleans Parish the death rate from cancer for men is already substantially higher than that in Newark, New Jersey. In Orleans Parish 242 of every 100,000 men died of cancer compared with 179 for the national average and 217 per 100,000 in Newark, New

Jersey. See attachment A. To the same effect is the report "Til Death Do Us Part" appearing in Figaro, April 19, 1979, V. 8, No. 15, page 7., a New Orleans weekly newspaper, a copy of which is attached hereto as Exhibit B.

The problem of radiation reacting in combination with other carcinogenic materials has been at least acknowledged by the national press, see Newsweek, April 9, 1979, "All About Radiation" at p. 40. In the Newsweek article we find the following statement,

"The public is subjected to a growing number of carcinogens -including radiation - that may combine to trigger the disease (Cancer). Radiation is a controversial field of research, and recent studies linking low level cancer dosage to leukemia and other forms of cancer have been critized as either too small in scale or too simplistic. For the past two years, a panel of the National Academy of Sciences has been struggling to interpret such findings, and its report is already nine months over due. Still a federal task force warned in February 'that risks may be higher than early predictions.' " See Id. p. 40.

The preliminary work of Dr. Irwin Bross, on public health, statistics of Drs. Thomas Najarian and Theodore Colton studying workers at the Portsmouth Naval Shipyard and of Dr. Thomas Mancuso of the University of Pittsburgh, studying the employees at Hanford Nuclear Facility in Richland, Washington is substantial evidence that the problem of low radiation is much more serious than been recognized. See "All About Radiation", Id. pp. 40-45.

Additional support for the danger of inherent low level radiation is also gathered from the following studies.

In "Genetic Damage from Diagnostic Radiation", 237 JAMA, p. 2399, Dr. Bross and Natarajan explored the following hypothesis. "Using the data from the Tri-State Leukemia survey and a mathematical model, the hypothesis of low levels of diagnostic radiation produce severe genetic damage that is expressed in the child of the exposed person as leukemia and other diseases is tested. It is estimated that for about one percent of the exposed persons who are affected by radiation there is a fifty fold increase in the risk of leukemia and a five fold increase in certain other diseases." See



Id. p. 2399. Similarly, Lundgren, et al, in "The Effect of Influenza Virus Infection On the Pulmonary Retention of Inhaled Ce.<sup>144</sup> and Subsequent Survival of Mice," 34 Health Physics, 557 (1978) reached these conclusions:

"Maximum radiation exposures in this study are many times lower than those to be determinantal to laboratory animals in other studies. ...Chronic exposure to 0.9 R/day from a shielded gamma source under field conditions was determined to be determinantal and decrease survival in a population of desert rodents.

Studies such as described herein will help define the long term consequences to native animal populations of waste released to the environment. Studies of the chemical and biological changes in the environment from the additional treated effluence are needed, as these may be more important than the addition of the low level radioactive wastes. Operational standards generally assure that humans will not be directly exposed to the determinantal effects of waste materials; however native plants and animals are not assured such protection. The present study demonstrates the need to factor in all components of the environment when evaluating the consequences of affluent releases. See Id., p. 608.

Finally, from the abstract of "Leukemia Risks From Neutrons" by Rossi and Mays, 34 Health Physics 353 (April, 1978) we find the following abstract:

An analysis of the leukemia incidents in A Bomb survivors at Hiroshima and Nagasaki, which utilizes recently published death dose calculations, discloses a substantial risk of leukemia induction by the maximum permissible annual dose equivalent for occupational exposure. The possibility that occupational exposure to neutrons may also pose a significant risk of induction of other neoplasms is considered. A reduction in the maximum permissible dose equivalent for neutrons seems indicated." See Id., p. 353.

It is submitted that in light of what is presently known about the cumulative relationship between carcinogenic materials and low level radiation, that there is a substantial basis for Contention Number 8 and joint petitioners respectfully submit that they have established a basis far beyond the "threshold test" which is "sufficient to require reasonable minds to inquire further." Further, as was held in the Vermont Yankee decision, it is

clear that the National Environmental Policy Act (NEPA) requires this Board to "consider every significant aspect of the environmental impact of a proposed action "See Vermont Yankee, op. cit., supra, p. 1216." Accordingly, joint petitioners urge acceptance of Contention Number 8.

CONTENTION NUMBER 9. Applicant has failed to properly evaluate synergistic effects of low level radiation in combination with known and suspected carcinogens such as halogenated hydrocarbons, other petrochemicals, body hormones, tobacco smoke and other similar substances in the environment, with regard to the following:

- a. Human populations which would be rendered more susceptible to cancer, heart disease, cardio-vascular and pulmonary diseases.
- b. Animal and plant populations which will be adversely impacted because of environmental stresses induced by these combinations of factors.

Contention Number 9 which deals with the combined effects of low level radiation and carcinogens is directed specifically towards an interaction between the two factors which acts to produce an environmental insult which is greater than the mere additive cumulation, that is the concern of Contention Number 8. Expressions of the synergistic principle may be seen from the following.

In "Irradiation In the Epidemiology in Leukemia Among Adults, 43 Journal of the National Cancer Institute, Number 2, (1978) at p. 301, Gibson, et al, make the following observation:

"Our investigations of leukemia in children suggested a synergistic effect between such factors as the mother's irradiation before conception of the index case, intra uterine irradiation, the mother's history of reproductive wastage and the history of early childhood virus diseases in the case. Whether the effect of these factors was combined, the relative risk for leukemia was higher than if each factor was considered separately." See, Id., p. 302. A similar consideration appears in the following discussion of

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analyses of cancer deaths of the Hanford, Washington workers. The authors state, "We uncovered three cancers with definite radiation effects (bone-marrow, pancreas and lung) while the approach of Marx et al, which included a strongly controlled analysis, revealed a definite association between radiation dose and multiple myeloma and pancreatic cancer. The significance levels were such that the two findings could not be statistical flukes. Marx et al postulate, as a cause of the association, exposure to identified chemicals at the same time of radiation, and we are suggesting that the association is a direct one. ...One reason why we used the double dosing model was because we assumed that the mode of action was the same for radiation as for other carcinogens (i.e. mutagens are potential carcinogens, and vice versa). We also know that genetic constitution exerts a strong influence on cancer sensitivity and that different constitutions reacted differently to different diseases (carriers of the gene for xeroderma pigmentosa, even in a recessive form are predisposed to skin cancer). Therefore we decided that the second assumption (B) was probably invalid. This conclusion prepared us for the possibility of non-linearity of the dose response curve (at a population level) since high doses would saturate a small proportion of highly sensitive individuals and leave the rest of the population with a different level of response. Another version of unequal sensitivity would be expected if carcinogens interact, and several surveys suggest that in relation to lung cancer the combined effects of smoking and radiation are multiplicative rather than additive."

See Canally and Stewart, "Low-Dose Radiation", the LandSet, July 29, 1978 at p. 262.

The synergism produced by radiation in combination with hormones has been examined and supported by substantial evidence. "Ineffective Radiation Dosage On the Synergism Between Radiation and Estrogen in the

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Production of Mammary Cancer in the Rat, the author makes the following observation:

"The Synergism between and radiation and DES administration is apparent from the time tumor charts. In animals anesthetized with pentobarbital, irradiation with 30 rads alone produced no malignant tumors, whereas irradiation with 50 rads of DES-treated animals produced a slight increase in tumor incidence over animals treated with DES alone. Irradiation with 150 rads alone produced only one malignant tumor in one animal in 91 weeks, whereas irradiation of 150 rads of DES-treated animals produced a marked increase in tumor incidence. Irradiation with 450 rads produced alone produced single tumors at weeks 78 and 103 but had the same effect as irradiation with 150 rads of DES-treated animals." See Id., 38 Cancer Research, p. 3449-3450.

The authors conclude "We have been able to show that mammary tumorigenesis (increase in benign tumors) is proportionate to the dose of radiation alone but that, within the limits of this study, carcinogenesis (increase in mammary cancers) from X-radiation alone is not significantly proportionate to dose. Mammary cancers produced with radiation alone were rare. The first was not observed until more than a year after the cancers appeared in the animals treated with both estrogen and radiation. Synergism between radiation and DES-administration is apparent. Thus we have a demonstration in rats, as well as in humans, radiation carcinogenesis is scopal." Id., p. 3452.

See also, Segaloff and Maxfield, "The Synergism Between Radiation and Estrogen in the Production of Mammary Cancer in the Rat", 31 Cancer Research, 166-168 (February, 1971).

With the issue of synergism, as well as with the problem of cumulative effects of low level ionizing radiation and carcinogens, it is submitted that the existence of the phenomenon is amply demonstrated and supported by substantial medical research. Although the research in this field is in its infancy; nevertheless it is submitted that the demonstration of a synergistic effect between radiation and known carcinogens does form a

substantial basis for admitting the validity of Contention Number 9. The potential for application of the synergy syndrome as demonstrated by the authorities cited above to the Waterford 3 context is certainly a significant environmental and health hazard. Therefore, adoption of Contention Number 9 is respectfully urged.

CONTENTION NUMBER 10. Applicant has failed to properly evaluate radiation emissions which will be created by spent fuel storage due to the underestimation of amounts of spent fuel which will be held in storage during the useful life of the facility.

CONTENTION NUMBER 11. Applicant has failed to properly evaluate radiation emissions which will be created by spent fuel storage by underestimating the amounts of spent fuel which will be processed, handled and stored based upon underestimation of the quantity of such products which will be stored on site at the facility.

Contentions Number 10 and 11 reflect a concern that in its projected 40 year operating life Waterford 3 will be required to process handle and store approximately three times as much spent fuel as it presently has the storage capacity to hold. These contentions are based on the unassailable fact that at the present time there is no known method for safely and permanently disposing of spent fuel wastes. As reported in Newsweek magazine, April 9, 1979 "Atomic Plant Safety-The Big Questions":

"Scientists have been pondering the problems of atomic waste for the past twenty years. The best solution so far devised has been to encase the spent fuel rods in stainless steel containers and bury them permanently thousands of feet below the earth's surface. The question is where.

Currently, five thousand tons of spent fuel from the 72 commercial reactors are temporarily stockpiled in vast underwater reactor sites, awaiting a permanent graveyard where they can be safely stored for five hundred years or more which must pass before they are no longer toxic. See Id., at p. 39.

Given the fact that there is no presently acceptable means for permanent disposal for spent fuel, the only conclusion that can be drawn from Louisiana Power and Light's application for a license to operate Waterford 3 over a 40 year period is that at the end of the 40 year period Waterford 3 will then be holding 40 years worth of spent nuclear fuel.

Counsel for joint intervenors are not unmindful of last year's decision of the Natural Resources Defense Counsel, Inc. v. U. S. Nuclear Regulatory Commission 582 F.2d 166 (2 D.C. Cir., 1978) which held that the NRC was not required to utilize its rule making procedures to determine that high level radioactive wastes could permanently disposed of safely before it should continue granting nuclear power reactor operating licenses. However it is respectfully submitted that the concern raised in Contentions 10 and 11 relate specifically to the quantities spent fuel which will be held at Waterford 3. It appears to joint petitioners to be elementary logic that if the amount of spent fuel held at Waterford 3 emission to which one assigns the value X, then the introduction of three times as much of spent fuel would appear logically at least, to give rise to a radiation output three times (3 X) as great. This is the basis of concern; and it is respectfully submitted that this concern is substantial enough to meet the "threshold tests" of Vermont Yankee; and therefore it should be accepted by this Board.

CONTENTION NUMBER 12. Applicant has failed to properly evaluate risks to humans caused by transportation of spent fuel and radioactive nuclear

wastes into and/or through the Greater Metropolitan New Orleans Area as a result of the following:

- a. Applicant's lack of adequate details regarding proposals for transportation of such materials
- b. Applicant's failure to accurately evaluate radiation releases resulting from such activity.

It has recently been reported that the N.R.C. has adopted regulations which curb transportation of spent nuclear fuel through densely populated urban areas and also to place additional precautions against possible hijackings or sabotage. See New York Times "Nuclear Panel To Limit Shipment of 'Spent' Fuel in Urban Regions", May 23, 1979. It is submitted that it would be difficult if not virtually impossible for high level wastes or spent fuel to be transported from the Waterford 3 site in conformity with these regulations. Accordingly it is submitted that this contention should be admissible in order to further explore the issue raised by these developments.

A further concern is illustrated by the recent accident in the Nevada desert in which high level wastes containing U-235 caught fire and burned resulting in substantial irradiation to those personnel who were involved in the shipment. See New Orleans Times-Picayune, May 20, 1979 (attached).

CONTENTION NUMBER 13. Applicant has failed to appropriately evaluate the health, safety and environmental risks which result from storage of the Waterford 3 site for an extended and as yet undetermined length of time, of spent nuclear fuel materials because of the lack of an acceptable and technologically feasible and reasonable means for permanent and interim storage of high level radioactive wastes and spent fuel materials; which thus renders applicant's interim storage as de facto permanent storage.

The concern expressed by Contention Number 13 is in some respects

similar to the concerns of Contentions 10 and 11. See Preliminary Conference transcript, pp. 88-90. Nevertheless it differs from these concerns in that it postulates that in view of the lack of technologically feasible and reasonably acceptable permanent high level wastes and spent fuel storage facilities, a nuclear power plant's spent fuel storage system becomes that plant's permanent storage system; which possibility is not in any way addressed by applicant in the Environmental Report or the FSAR. The enormous difficulty of dealing with the spent waste disposal problem was recognized by the 2nd Circuit in N.R. D.C. v. N.R.C., quoting from the general accounting office September 9, 1977 report to Congress, The United States Nuclear Energy Dilemma: Disposing of Hazardous Radioactive Wastes Safely. The 2nd Circuit noted the General Accounting Office's observation "the unresolved problem of radioactive wastes disposal threatens the future of nuclear power in the United States. Nuclear critics, the public, business leaders and government officials concur that a solution to the disposal problem is critical to the continued growth of nuclear energy. See N.R.D.C. v. N.R.C., op. cit., at p. 125, Note 15.

Joint intervenors submit that the purpose of Contention Number 13 is to require the examination of the Waterford 3 fuel facility as a de facto permanent storage facility, a purpose for which the spent fuel storage facility was never intended. Once again joint petitioners urge adoption of this contention on the grounds that there is a reasonable basis for an examination of the problem and for the reason that the contention however inarticulate it may appear to the trained scientific mind, nevertheless rises above the level of the "threshold test" and therefore as a matter of law is legally acceptable.



CONTENTION NUMBER 14. Applicant has failed to properly evaluate the present inability to dispose of spent fuel assemblies which will ultimately result in the necessity of increased expansion of the spent fuel storage facilities at the Waterford 3 site.

Contention Number 14, although concededly sharing the concerns of Contentions 10, 11, and 13, should be allowed as an acceptable contention because it does state a valid concern for safety and environmental health based upon the present state of the art in spent fuel storage.

CONTENTION NUMBER 22. Applicant has failed to discover, acknowledge, report or remedy defects in materials, construction and workmanship such as improperly poured and set concrete and concrete poured without required reinforcement during the fabrication of the containment vessel, (reactor vessel) and/or related integral systems.

As counsel indicated in the preliminary conference, the allegations of construction deficiencies is entirely too easy to make; and exceedingly difficult to develop from an evidentiary basis; nevertheless it has been reliably reported by a major New Orleans newspaper, The States-Item that there are "numerous mistakes being made in the concrete work at Waterford." Understandably, the individuals making such allegations prefer to remain anonymous in order to retain their employment.

A copy of the relevant portion of the article is attached hereto as Exhibit D. Were this information merely isolated, there would be substantial reason to doubt its admissibility as a contention; however, the General Accounting Office has criticized the Commission for not being thorough

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enough in its inspection of the construction of nuclear power plants. See Wall Street Journal, September 11, 1978, p. 3 column 1. The GAO's report specifically stressed that the N.R.C. has not communicated sufficiently with workers at the sites in order to be able to evaluate deficiencies in construction which are otherwise undiscoverable, and which constitute a substantial hazard to the public's safety and welfare. The GAO report further indicates that its own investigation confirmed the accuracy of four such reports which had previously been ignored by the N.R.C.

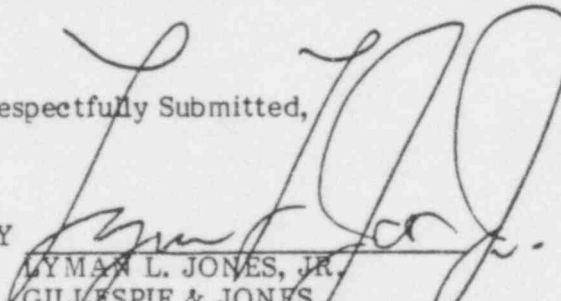
Although it is very difficult for a public interest group to obtain substantial and reliable information in issues such as this, it is submitted that intervenors should at least be granted the opportunity to commence discovery in order to determine whether or not there is, in truth and fact, any substance to the cited reports. Accordingly, joint petitioners submit that Contention Number 22 is most assuredly a concern substantial enough to warrant further inquiry by reasonable minds; and hence an acceptable contention.

#### CONCLUSION

For the reasons advanced herein based upon the analysis and authorities cited herein, it is respectfully submitted that the above discussed contentions should be adopted.

Respectfully Submitted,

BY

  
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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of

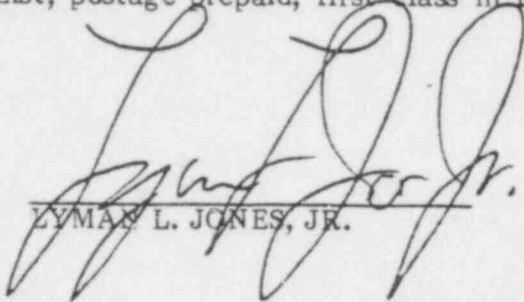
LOUISIANA POWER AND LIGHT COMPANY

DOCKET NO. 50-382

(Waterford Steam Electric Station Unit 3)

CERTIFICATE OF SERVICE

I hereby certify that on JUNE 1, 1979, I mailed copies of Save Our Wetlands, Inc. and Oystershell Alliance, Inc.'s Joint Petitioners' Arguments Regarding Contested Contentions to all individuals or entities appearing on the attached Service List, postage prepaid, first class in the United States Mail.



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# Cancer Rate Soars Near Refineries

BATON ROUGE, La. (AP) — The Mississippi River and Gulf Coast areas where crude oil is turned into gasoline, plastics and other products may have the nation's highest cancer rates before 1985, a federal scientist says.

"New Jersey now ranks as the No. 1 cancer state, but we suspect the petrochemical area along the Mississippi River and along the Gulf Coast will nose out New Jersey for the No. 1 spot within five years because it's growing at a much more rapid rate," said Eugene Sawicki.

Sawicki, an analytical chemist for the Environmental Protection Agency, said the EPA ran a preliminary study in the Baton Rouge area to check for a possible link between cancer and chemical plant emissions.

"We came to Baton Rouge because it is a growing industrial area where they keep adding new petroleum industries and new chemical companies," said Sawicki, who was project manager for the study.

He said that checks of the air in Baton Rouge and Geismar during a three-day period in 1977 found four chemicals known to cause cancer and five suspected of being carcinogens.

Most, he said, were substances called halogenated hydrocarbons.

"If you look at the known cancer 'bad boys,' at least 50 percent of them are halogenated hydrocarbons," Sawicki said.

"What our findings in the Baton Rouge area indicate is that the area needs much more study," he said.

The EPA report emphasized that the process of

tracking down, separating and identifying airborne cancer-causing chemical compounds is in its embryonic stage. And there is even less knowledge about how much of the total chemical mix in the air is necessary to cause a given type of cancer.

While EPA scientists predict Louisiana's cancer rate will overtake New Jersey's in five years, figures in a national report show that — at least in Orleans Parish — the death rate from cancer for men is already substantially higher than that in Newark, N.J.

The report by the National Cancer Institute said

that of every 100,000 men who died in the parish, 242 died from cancer. This compares to a national average of 179 and a rate of 217 in Newark.

The cancer death rate for women was 154 per 100,000 in both Newark and New Orleans; this compares to a national rate of 135 per 100,000, the report said.

It also said that 25 Louisiana parishes were in the top 10 percent nationwide for lung cancer deaths, and 13 parishes were in the top 1 percent. Of those 13, nine are along the Mississippi River or Gulf Coast.

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Attachment A



# Till Death Do Us Part

*Currently, New Jersey Leads The Nation In Cancer Incidence,*

*But EPA Officials Predict That The Baton Rouge - New Orleans Corridor*

*Will Become Number One Within Five Years*

By D. ERIC BOOKHARDT

The metallic mushroom domes rise like the spores of some alien, intergalactic fungi along the banks of the river. Complex entanglements of tendril-like pipes and fittings glisten in the sun like the exposed root systems of other worldly mechanical organisms, periodically releasing steam or smoke or some less identifiable gaseous mixture into the air. At intervals along the levee these pipes project across the banks and dip into the river.

It sounds almost like a Japanese science fiction movie, but nowadays, it is more commonly referred to as "the mainstay of Louisiana's unprecedented industrial expansion." The topic question is in fact the state's burgeoning petrochemical industry, and a drive along the river between New Orleans and Baton Rouge should be sufficient to convince anyone that the state's industry has indeed been intensely developed at least in that area.

Any 30 year old may recall that as a child, the drive along the river was a retreat to a bucolic paradise of farm houses, crumbling plantations, and animals grazing in pastures with blurred boundaries giving way to the swampy wilderness beyond. The transformation of that landscape, along the river and throughout large areas of southern Louisiana, is one of the most significant economic-environmental developments in recent times. Now that it has happened, and officials are saying more development is expected, it may be wise to examine the consequences.

Economically, it has been a mixed blessing. The petrochemical industry is capital- and energy-intensive, which means that a lot of money and energy is utilized. Petroleum and chemical development and refining is a high-technology complex that requires a lot of industry for each laborer employed. The pipelines and canals that have been built to service these industries have in turn caused environmental damage such as saltwater incursions into the swamp, which in turn cause damage to the seafood and fur industries. Independent trappers and fishermen must then find other employment, usually with the big industries themselves. (The government profits from this arrangement since it is easier to tax a corporate employee than someone who lives off the land.) And the taxes that the state derives from all these valuable petroleum and chemical products in turn help produce the healthy state budget surpluses that now exist in Louisiana. So while the fisherman and trapper face problems, and the rate of employment grows more slowly than it would in relation to more labor-intensive industries, a lot of money changes hands that the state gets to siphon off in the form of taxes. Whole books can be, and have been, written on the economic implications of these industries.

Of especially pressing concern at present, however, are the health and environmental effects of these

industries. In its rush toward industrial development, the state gave only lip-service, token consideration for these concerns, in the past, finding it easy to ignore the deteriorating water quality in the state. It took the shocking and sudden death of Kirt Jackson, a 19-year-old worker at a chemical waste disposal site, to focus awareness on the problems. The state responded with a variety of measures, but only after the fact. In addition to the toxic waste substances produced by our own industry, Louisiana has also been the recipient of chemical wastes in large quantities from all over the country, to be disposed of at dumps like the one where Kirt Jackson was overcome by lethal fumes. After his death, a temporary ban was placed on permits for such disposal.

The untimely death of young Kirt Jackson has caused him to be viewed in retrospect as something akin to an involuntary martyr, but unfortunately his case may not be an isolated one. George Davis, a former petrochemical refinery worker employed by Hooker Chemical and Occidental Petroleum companies, died two weeks ago of cancer allegedly contracted during work at the plants.

A \$7.6 million suit has been filed on behalf of Davis' family against Hooker and Occidental. Davis, 44, had been a pipefitter and welder at

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Hooker and Occidental's Taft, Louisiana, refineries. He had not worked there in two years. The Davis suit alleges that his condition was caused in all probability by continued and prolonged repetitive exposure to chemicals manufactured at the Taft facilities, that are known (and in some instances suspected) carcinogenic agents.

The case of George Davis, who lived one month longer than his doctors had predicted, underscores the health threat that increasingly has been associated with petrochemical refineries, namely that their presence in an area seems to cause the cancer rate to escalate.

The Environmental Protection Agency (EPA) has been conducting tests in this area to explore the seeming correlation between cancer and chemical refineries. Eugene Sawicki, an analytical chemist for the EPA, has reported finding at least four cancer-causing chemicals and five suspected carcinogens in the air around Baton Rouge. Since the Baton Rouge-New Orleans corridor is an area of intense petrochemical development, it does not seem very surprising that this area also leads the nation in incidence of lung cancer. (Currently New Jersey, another heavily petrochemical state, leads the nation in cancer incidence across the board, but

Sawicki and EPA officials predict that this area will become number one within five years.)

Another study, undertaken locally, gives credence to the theory of the petrochemical-cancer link. This study, sponsored by the Cancer Association of Greater New Orleans, indicates that the areas with the highest rates of the disease are the most industrialized areas, namely West Jefferson and St. Bernard. Since the study was limited in scale, it used a demographic approach and did not measure air pollution per se. However, it was able to conclude that locally the victims of lung cancer were largely male, residents frequently of those areas mentioned, and frequently employed in outdoor professions, namely construction and demolition. (It should be noted that as a pipefitter, George Davis was technically a construction worker. He was employed out of AFL-CIO Local 60, a building trades union.)

#### MANUFACTURING CARCINOGENS

Since the petrochemical installations under question are sometimes involved in the manufacture of one or more carcinogenic agents, it stands to reason that the environmental contamination by these substances is possible. The question then becomes, how does this contamination come about? Accord-

ing to Davis, it was often a case of sloppiness on the part of industry. And a closely related factor: money. Davis maintained that chemical fumes and gasses were ever-present at the refineries, frequently resulting from leaks. "You couldn't always see them, but you sure could smell them," he said.

Davis maintained that although the refineries are intrinsically dangerous for these obvious reasons, the danger did not have to be as great as it was. He felt a lot could have been done to protect the workers and residents of the affected areas that was not done because of the expense. Some plants in the Taft area had much better safety records than others, he said. And Hooker, he argued, was the worst. "A pipe would blow and they'd say, 'Patch it, don't replace it.' -- Now you know that's not going to be as safe... Hooker was just too damn cheap to do what was right."

It's not the first such allegation against Hooker. A recent development at Love Canal in New York state showed Hooker has disposed of 21,000 tons of chemical wastes at the site over a 10-year period.

The site was eventually closed and covered over. Residential developments in the area expanded into close proximity of the former dump. Gradually, the buried chemicals began migrating

upward and outward. Plants began to wither and die. Chemical fumes rising from beneath the slabs of houses became so strong as to discolor the paint on the walls.

When the residents themselves began to exhibit symptoms of sickness and physiological impairment, 239 families who lived on streets near the former dump had to be moved out and relocated. That was last summer. More recently, New York state officials have discovered the existence of another Hooker Chemical dump site four times larger and more dangerous than Love Canal. This second site, the existence of which Hooker had never disclosed, is believed by officials to contain as much as 100 pounds of dioxin, a component of 3,300 tons of tri-

chlorophenol buried there. Dioxin is extremely dangerous and just 4½ pounds of the stuff released into the air by a factory explosion in Seveso, Italy, forced the evacuation of the entire community.

While some candidates campaign for governor on the basis of having brought industries like Hooker Chemical and Plastics to Louisiana, George Davis' attorney, Robt. E. "Bob" Lee, feels that the abuse of the public interest and the environment by such industries is a potential scandal. "Watergate was a kid's game compared to this scenario," he maintains. He was startled to discover while researching this case that Davis' neighbor across the street on Azalea Dr.,

had died from cancer six months ago. Like Davis, he was an industrial pipefitter-welder and a fellow union member. Within a five block radius of the Davis' home, down the road from Taft, Lee discovered that Frank Marsiglia, also an industrial worker and friend of Davis had also contracted cancer, as had two wives of industrial workers in the area. Another friend of Davis and fellow industrial worker, Ron Walker of Bridge City, had contracted cancer and died during the same period, reports attorney Lee. While it is possible that these seemingly similar cases may all just be coincidental, the disturbing possibility remains that they are not. And in the light of Louisiana's nationally publicized pollution problem,

many of the state's residents are becoming increasingly concerned.

The problem stems from an apparent lack of adequate safeguards at the state level to protect public and environmental health. In a seminar on air quality held last Oct. 8, assistant Louisiana Attorney General Richard Troy said that pollution control in the state is not enforceable. He said present laws do not allow the state health department to win an injunction, much less a penalty, against polluters. In his view the existing state pollution law, enacted in 1964, was a preemptive one, designed to keep the federal government out of pollution control here.

The lack of controls, coupled with tax incentives, has apparently succeeded in attracting industry to

this ecologically sensitive state. Officials now claim that Louisiana was the number one state in industrial expansion last year, and Ed Steimel, president of the Louisiana Association of Business and Industry estimates that 37 percent of the state's work force is employed in the area of petrochemical production and refining, and related manufacturing. If those figures are accurate, they would amount to the highest per capita concentration of such a work force in the country. Since the petrochemical industry is highly energy intensive, and the currently favored means of generating energy — coal and nuclear — are also regarded as possible environmental and health problems, it would seem that we have entered an economic-environmental cycle that some would regard as vicious. Among those critics was George Davis. "Up North, they have seen what they (refineries) can do, and they don't want them any more."

#### OVERKILL STATUS

Despite all the proud statements on the part of some politicians and industry officials, there seems to be a growing sentiment that the refinery situation may be approaching overkill status in some areas. Even Edwin Edwards has suggested that the state should be more cautious and selective in its industry-seeking. In a similar vein, Russell Long has stated that Southern states with less industrial expansion will soon be releasing figures revealing a growth rate in employment of "two and a half times as many new permanent jobs as Louisiana."

Further complicating the already complex issue is the state of the economy and the much-ballyhooed energy crisis. As the cost of oil goes higher and higher and economic pressures tend to worsen as a result, there will undoubtedly be pressure applied from some quarters to reduce environmental controls on industry as a means of reducing costs. Already Louisiana's own Sen. J. Bennett Johnston has proposed a bill that would speed up the licensing and construction of nuclear power plants. Included in the proposed legislation is a proviso that the Department of Energy be given one year to solve the spent-fuel storage problem, even though

the nuclear industry after 30 years in operation has never managed to devise a plan that could safely be put into operation. A significant feature of the Johnston bill is a stipulation that when the Department of Energy finally makes a decision on the environmental aspects of its storage plan, no alternatives to the energy department's scheme would be considered. In the light of the fact that the two states receiving the closest scrutiny by the Department of Energy for use as a national nuclear storage dump are Louisiana and New Mexico, because of their salt deposits, the Johnston proposal has caused a shock wave of alarm among the state's environmentalists. One New Orleans daily morning

newspaper, known for its conservatism, found the contents of the bill alarming and extreme enough to prompt a critical Sunday editorial.

The Johnston bill is unusual for the simple reason that most politicians' sense of survival precludes them from proposing legislation that might result in

their own state being used as a dumping ground for extremely hazardous wastes. But it does nonetheless reflect the sentiment of certain economic interests that environmental concerns may be simply too costly now that the economy is facing problems. On the other hand, conservationists such as LSU chemist Dr. Joel Selbin maintain that vast amounts

of energy are actually now available at no expense to the environment merely by wiser use of the resources we already have. (One such approach widely used in Germany, Sweden, and in the United States in earlier years is called co-generation. Waste steam from industrial plants is used to generate electricity rather than being discarded into the at-

mosphere.)

And so it goes. Industry advocates argue that petrochemical plants have given this state numerous economic advantages, including a tax base that makes the private citizens of this state among the least taxed in the nation. Critics charge that the state is devouring itself for the sake of paper profits, while the

real quality of life is buried in a sea of industrial wastes. In the middle are those who feel that more environmental safeguards and more labor-intensive types of industry would be desirable. Meanwhile, George Davis' family and other residents of the state's industrial areas are waiting to see what will happen next, while the arguments rage on. □

## Nevada Governor Bars Nuclear Waste Shipments

CARSON CITY, Nev. (AP) — Gov. Robert List has signed an executive order barring further shipments of nuclear waste into the state from southern California while a nuclear accident in a remote part of Nevada is being investigated.

The investigation focuses on possible improper packaging of the contaminated material which caught fire Monday in a truck at a nuclear dump near Beatty. Ten persons were subjected to low levels of radioactivity when they emptied the truck.

List, in signing the order, also called for development of a master plan for the packaging and shipping of radioac-

tive materials for dumping or transporting in Nevada.

California joined Nevada in barring further shipments of nuclear waste by Aerojet Co., Harbor General Hospital, Los Angeles County Hospital, Veterans Administration Medical Center, Jennings Laboratory and Thomas Gray and Associates, all of southern California.

In addition, the California Health Services Division has ordered Aerojet to suspend the use of all radioactive materials because of its apparent violation of packaging requirements for nuclear waste.

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# Recurring nightmare

Continued from Page 1

place, Norco, Montz, Lucy, Sellers and Good Hope. Lucas said that in the event of an accident at Waterford 3, these are towns that "are definitely involved, that we worry about."

Lucas' fears are shared by many of the people who live in the shadow of Waterford 3, which is now about 60 percent complete and scheduled to be in operation by 1981.

Eva Singleton, a third-grade teacher at Killona Elementary School and the mother of three children, said the accident at Three Mile Island "makes you think that it could happen here, and if it does, that would be the end of us. We're so close here, where could we go?"

Such concerns were reinforced yesterday by several construction workers at the power plant. Three workers, employed as concrete masons at the plant, said at a lounge near the plant that they have witnessed numerous "mistakes" being made in the concrete work at Waterford. The workers, who declined to give their names or to provide detailed explanations, said the mistakes are serious enough to cause them to worry about the operating safety of the plant.

"It's not perfection," said one worker, who identified himself as a supervisor of other concrete masons, "and yes, I would be concerned about living here."

The supervisor said he lives in New Orleans.

LP&L officials, however, insist that the Waterford plant will be safe. Roy W. Prados, the nuclear licensing engineer for the plant, said even in the event of the worst conceivable accident at the plant — a loss of coolant from a partial melting of the reactor's core — a person near the plant probably would not suffer "any observable effects in a lifetime."

But that conclusion is disputed by nuclear power opponents such as Louisiana State University chemist Joel Selbin, who claims LP&L officials "haven't the foggiest notion whether it's correct. The fact is, they'll tell you anything."

**KILLONA IS A** predominantly black town of about 500 inhabitants. Many are employed downriver at Avondale Shipyards Inc. or at the nearby Union Carbide plant; very few work at Waterford 3.

Nevertheless, the nuclear reactor is an inescapable presence in Killona. The plant's concrete tower looms next to the River Road out of a former sugar cane field that is literally in Killona's backyard. Sometimes the steady roar of construction work be-

But if there was a real danger, I guess I'd leave."

A survey of the residential area near the Waterford 3 plant turned up only one resident who is openly enthusiastic about the plant. Joseph Vincent, the owner of the After Hours bar and restaurant on the River Road in Killona, said he believes the power plant "is dangerous, but it's a chance we have to take."

Vincent said most of his customers are construction workers from the nuclear power plant and admitted "if it wasn't for the power plant, I wouldn't be here."

All of the Killona residents interviewed complained they had never been visited by officials of either LP&L or state and parish safety agencies to explain the potential dangers of the power plant and emergency plans for it.

"GOD KNOWS, I wouldn't know what to do (in the case of an accident)," said Jacqueline Brown, who also teaches at the Killona Elementary School. "I wouldn't know whether to go up or downriver."

Lucas, however, said he has given numerous talks about "Emergency preparedness" to St. Charles Parish residents. He said he spoke to "a whole group of leaders from Killona" recently but told them he could not give details of the nuclear emergency plans because these have not yet been completed.

The civil defense director said those plans, which he is drafting with the Nuclear Energy Division of the state Conservation Department and with the cooperation of LP&L, will be completed by the end of this year and will be tested probably late next year.

A New Orleans-based organization opposed to the construction of nuclear power plants, Save Our Wetlands Inc., yesterday filed suit in Civil District Court, asking that the state be ordered to also devise an evacuation plan for the New Orleans area, or else halt the construction of Waterford 3.

Lucas said if an evacuation is required, he is especially concerned about the limited number of roads leading out of the area. The civil defense director admitted that even by the time the Taft plant is operating, there will be only three evacuation routes on the west bank and two on the east bank, and "I don't know what can be done about it."

"This is our main problem in St. Charles Parish, no joke about it," he said. "We live in a trough surrounded by water, with limited access and egress."

Lucas believes the Three Mile Island accident will speed up emergency



## Sound sleeper

Two-year-old Dionne Baylor is in the Three Mile Island nuclear power plant in Hershey, Pa. Dionne was in the car when an accident crippled the Three Mile Island nuclear power plant. (AP Wirephoto)

## People

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Marilyn laughed at JFK r

A maid and confidant of Marilyn Monroe says the movie sex symbol laughed at rumors that she was having an affair with President John Kennedy or his brother Robert.

Lena Pepitone, who started working for Miss Monroe in 1957, quotes the actress as calling the Kennedy brothers "cute" and saying she liked them because they were "funny and smart."

"But I remember her insisting, 'They're not my type. They're boys,'" Ms. Pepitone says in the May issue of Playboy magazine.

Ms. Pepitone said the actress told her John Kennedy did not act like a president when he was around her. "He was always telling her dirty jokes, pinching her and squeezing her . . .," the former maid said.

Miss Monroe met the Kennedys through actor Peter Lawford, who was married to a Kennedy sister, Ms. Pepitone said.

The article was excerpted from a Simon & Schuster book, "Marilyn Monroe Confidential," to be published this

## It's 'Beyond

Margaret Trudeau, Canadian Prime Minister Trudeau's wife, once encouraged her to end the affair after she attempted suicide.

Mrs. Trudeau disclosed that she tried to cut her wrist with a knife into her chest. She accused her of being unfaithful. He told her: "You are

The Toronto newspaper reported yesterday in its one week-long serial "Beyond Reason" that she fell madly in love with the "high-powered American" during a tournament in New York.

When her husband was being unfaithful, Mr. Trudeau screamed, "Oka love!" She said she attempted to stab him with a knife.

She said in the book that she was hospitalized