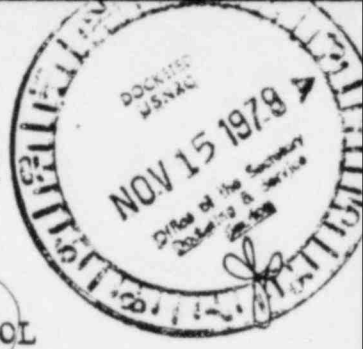
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION



BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
WASHINGTON PUBLIC POWER SUPPLY SYSTEM	)	Docket No. 50-397-OL
	)	
	)	AMENDED PETITION FOR LEAVE TO INTERVENE
(WPPSS Nuclear Project No. 2)	)	

11/8/78

Hdqtrs. PDR

Susan M. Garrett and Creg Darby, pursuant to the Commission's notice dated July 26, 1978 and the Order relative to petition for leave to intervene dated October 11, 1978, submit this Amended Petition to Intervene (1) on their own behalf, and (2) as authorized representatives of the Hanford Conversion Project.

Petitioners allege:

I. NATURE OF PETITIONERS' RIGHTS

Petitioners request for leave to intervene constitutes a de facto motion to reopen issues. Regulations permit this if there exists significant and important additional evidence which substantially affects conclusion(s) reached at an earlier stage, or if there is other good cause. 10 CFR 2.503. The Atomic Safety and Licensing Appeal Board has held that early findings are"subject to reconsideration should supervening developments or newly available evidence so warrant."1 NRC at545. Further, the Appeal Board has held that the need for careful, thorough examination of critical safety and environmental issues outweighs the need to expedite the decision-making process. Cleveland Electric Illuminating Co. et al. (Perry Nuclear Power Plant, Units 1 and 2), ALAB-993, 2 NRC 730, 737 (1975). The bulk of the record of the WNP-2 project was

developed prior to 1973; in the intervening five years a wealth of evidence has come to light which significantly modifies material in the record. This new evidence is appropriate to raise at operating license stage. Georgia Power Co. (Vogtle, Units 1 and 2) ALAB-291, 2 NRC 404, 469. Had this evidence been considered initially, different conclusions would have been reached. Kansas Gas and Electric Co., et. al.(Wolf Creek Generating Station, Unit No. 1), ALAB-462, slip op. p.36, (3/9/78). Some of the evidence to be presented by petitioners is outlined and discussed under the Contentions section of this amended petition.

II. PETITIONERS' INTERESTS

A. Petitioner Susan M Garrett resides at 632 SE 18th St, Portland, OR. She uses the Columbia River for recreational purposes, including swimming, fishing and boating; eats fish from the Columbia Piver; consumes produce and meat grown with water from the Columbia River; consumes produce grown, livestock raised and dairy products from livestock raised within 50 miles of the Hanford Reservation; and consumes livestock and dairy products from livestock fed with produce grown within 50 miles of the Hanford Reservation and watered with Columbia River water. She is of childbearing age and is a potential mother.

B. Petitioner Creg Darby resides at 2425 SE 24th, Portland, OR. He consumes produce grown with water from the Columbia Piver; consumes produce grown and dairy products from livestock raised within 50 miles of the Hanford Reservation; and consumes dairy products from livestock fed with produce grown within 50 miles

of the Hanford Reservation and watered with Columbia River water. He eats mainly organic foods. He is of childbearing age and is a potential father.

D. Petitioner Hanford Conversion Project has a business address of 4312 S.E. Steele, Portland, OR. 97215. It is a coalition of representatives from anti-militarist and anti-nuclear organizations from all parts of Washington and Oregon. Represented organizations are the American Friends Sservice Committee, Clergy and Laity Concerned, Yakima Nuclear Study Group, Trojan Decommissioning Alliance, New American Movement, Mobilization for Survival, Crabshell Alliance, Fellowship of Reconciliation, Center for Energy Research, Live Without Trident, and Power Research Group. Individual members of the Hanford Conversion Project include the persons named in affidavit attached to original petition to intervene, incorporated by reference herein, plus additional persons whose affidavits are attached hereto or will be mailed under separate cover as soon as available. Most of these members, along with their families, use the Columbia River for recreational purposes, including swimming, fishing and boating; eat fish from the Columbia River; consume produce and meat grown with water from the Columbia River; consume produce grown, livestock raised, and dairy products from livestock raised within 50 miles of the Hanford Reservation; and consume livestock and dairy products from livestock fed with produce grown within 50 miles of the Hanford Reservation. Some of these members eat only organic food. Some of them have children and some are of childbearing age. Certain of the members have additional particular interests, as follows:

1. A.C. Rolls (copy of affidavit, letter and tax assessments attached as petitioners' attachment D) is an attorney in Oceanside, Oregon. He owns land at Rt 3, Box 3670, Kennewick, Washington, about 10-15 miles west from the Hanford Reservation, near the Columbia River. On this land are two residences, which he rents out. Part of his land is used by the tenants for commercial farming and raising of livestock. The residences are dependent on well water for human consumption and irrigation.

2.Ruth Long(copy of affidavit forthcoming) resides in Richland, Washington approximately 12 miles from the Hanford Reservation. She lives with her family, including 2 minor children, and is supported by her husband who works in the Richland area.

Further affidavits of members of the Hanford Conversion Project will be provided under separate cover.

III.HOW PETITIONERS' INTERESTS MAY BE AFFECTED BY THE RESULTS OF THIS PROCEEDING

In the event applicant is granted an operating license, petitoners would be affected in the following ways:

A. The operation of the plant would endanger the health and safety of all petitioners by its damaging effect on the water temperature and water quality of the Columbia River, resulting in the killing and polluting of the fish; the polluting of the river making it unsafe for swimming and boating; the polluting of the water making it unsafe for the irrigation of crops consumed by petitioners and by livestock

consumed by petitioners; the polluting of the water making it unsafe for drinking by livestock consumed by petitioners.

B. The operation of the plant would endanger the health and safety of all petitioners by its possible contamination with radioactive materials of the atmosphere within at least 50 miles of the plant, making the air unsafe for petitioners to breathe and contaminating the livestock who breathe it and are consumed or have their dairy products consumed by petitioners.

C. The operation of the plant would endanger the health and safety of all petitioners by its possible contamination with radioactive materials of the soil within at least 50 miles of the plant, makingthe soil unsafe to grow crops for consumption by petitioners and by animals who are consumed or have their dairy products consumed by petitioners.

D. Those petitioners with young children would be further damaged in their inability to provide a clean and safe living environment for their children.

E. Those petitioners of childbearing age would be further damaged in their inability to protect their future children from possible genetic damage and to assure a clean living environment for their future children.

F. The pollution of food sources and the killing of the fish herein before mentioned would further damage petitioners in that the sources for their food would be limited, causing increases in prices, particularly for those petitioners who eat only organic food.

G. Those petitioners who have jobs in the area of the

plant would be further damaged in that a major plant accident in the area would necessitate evacuation and the loss of their jobs; additionally, possibility of a major accident or lesser contamination by the plant might cause people to move from the area causing loss of business and consequent loss of jobs.

H. Those petitioners who own property in the area of the plant would be further damaged in that the property value of their land might decrease, making it difficult to sell and to rent and causing decrease in rental or sales value.

I. Those petitioners who raise crops or livestock in the area of the plant would be further damaged in that release of radioactive materials from the proposed reactor would occassion harm to the produce and livestock and make them unfit for sale and consumption.

J. Petitioners would be particularly injured because radioactive effects are additive and the Hanford site includes the N-reactor; Purx plant which may be reopened in the next year; and extensive nuclear waste storage in addition to the proposed WPPSS 2 reactor.

IV. SPECIALIZED EDUCATION & PERTINENT EXPERIENCE OF PETITIONERS

A. Petitioner Susan Garrett received a law degree from Northeastern University School of Law, Boston, Mass., in 1975. She has worked since the fall of 1977 for the Center for Energy Research, Portland, Oregon, researching nuclear power safety and economic issues. On March 16, 1978, she was accepted as an intervenor in In the Matter of the Portland General Electric Co. et. al., NRC docket No. 50-344(spent fuel storage). She participated in extended hearings in that

case during Spring 1978, cross-examining witnesses and presenting experts on need for power issues involved in that proceeding and on other issues, including the safety hazards of the proposed expansion. As plaintiff, researhcer and drafter, she brought lawsuit against Portland General Electric Co. in the U.S. District Court for the District of Oregon in mid-1978, claiming that an Environmental Impact Statement (EIS) was needed to assess the effects of long term storage of spent fuel at the Trojan plant and that modifications to allow on-site storage were impermissible without an EIS. Among other contentions, she raised need for power issues in that proceeding.

B. Petitioner Creg Darby has a B.A. degree from Reed College; he has taken courses in math and physics; he has studied safety and economic issues of nuclear power and of nuclear waste issues; he is an independent student of philosophy, with a special interest in the philosophy of science.

C. Pettioner Hanford Conversion Project through its member organizations and individual members has extensive information and access to information on safety and economic issues of nuclear power in general and this proposed plant in particular. HCP has fund raising abilities and abilities to finance transportation and witness fees of expert witnesses.

V. WITNESSES AND OTHER ASSISTANCE

A. Petitioners have the intention and ability to call expert witnesses to testify. Hanford Conversion Project has funds and fund-raising capacity as described in paragraph IV C. herein. In particular, and in addition to other wit-

nesses, petitioners will seek to call as witnesses the following persons:

1. Carl Friedman. Mr. Friedman has been studying the power situation in the Pacific Northwest for the past year. He has conferred with experts at the Bonneville Power Administration and the Oregon Department of Energy. He has assisted intervenors with their preparation of the Pebble Springs case. (In the Matter of Portland General Electric Co., Pebble Springs Nuclear Plant, Units 1&2). He was certified to give expert testimony regarding need for power issue at the Trojan spent fuel case. (In the Matter of Portland General Electric Co., Trojan Nuclear Plant, NRC docket No. 55-344 (1978) (spent fuel storage). He assisted Oregon Department of Energy director Lionel Topaz with research on need for power in the spent fuel case.

2. Robert Murray. Mr. Murray has been appointed to head Seattle City Light which serves the electricity needs of the city of Seattle. He participated in the Skidmore, Owings, and Merrill study for the Bonneville Power Administration which indicated that more efficient use of electricity could save this region as much as one half of the growth forecast by the region's utilities.

B. Petitioners have the volunteer assistance of several attorneys, including Constance Crooker, David Shapiro and Doreen Nepom, all of Portland.

VI. OTHER MEANS AVAILABLE TO PETITIONERS

Petitioners have no other means available to them at this time to protect their enumerated interests.

VII. EXTENT TO WHICH PETITIONERS' INTERESTS WILL BE REPRESENTED BY EXISTING PARTIES

No other parties will adequately represent petitioners' interests.

VIII. CONTENTIONS

PREFATORY COMMENTS

Leeway is permitted to the Board in judging the sufficiency of petitions (and, by implication, contentions) where lay persons with limited technical and legal expertise are concerned. The Appeal Board stated the following in dicta from Kansas Gas and Electric CO.,and Kansas City Power and Light Co., (Wolf Creek Generating Station, Unit No. 1., (ALAB-279, 1 NRC 559 at 576-7 (6/30/75):

> We can appreciate the difficulties a party may have where it must express in a petition to intervene technical matters beyond the ordinary grist for the legal mill. And we empathize with petitioners who must of necessity proceed pro se, or with counsel new to the field (if not also to the bar). In those circumstances the Commission has for good and sufficient reason allowed us and the licensing boards leeway in judging the sufficiency of intervening petitions. /Citing Digman, AEC Rules of Practise, 16 Atomic Energy L.J.3, 9-24(1974)./

That the merits of the contentions are not at issue has been well established. Section 2.714 "does not require the petition to detail the evidence" which will be offerred in support of each contention. Mississippi Power and Light Co. (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 NRC 423 at 426 (6/19/73); Duquesne Light Co. (Beaver Valley Power Station, Unit 1), ALAB-109, 6 AEC 243 at 244-5 (4/2/73): "...in holding that..contentions fulfill the requirements of Section 2.714(a), we do not pass upon whether they are

meritorious..."; Duke Power Co. (Catawba Nuclear Station, Units 1 and 2),ALAB-150, 6 AEC 811 at 812 (1o/2/73). A contention may be admissible "irrespective of whether resort to extrinsic evidence might establish the contention to be insubstantial." Alabama Power Co. (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210 at 217 (3/7/74).

Rather,".. the intervention board's task is to determine, from a scrutiny of what appears within the four corners of the contention as stated, whether (1) the requisite specificity exists; (2) there has been an adequate delineation of the basis for the contention; and (3) the issue sought to be raised is cognizable in an individual licensing proceeding." Alabama Power, supra, at 216-7. The requisite specificity is that which is "reasonable." Grand Gulf, supra, at 426. Moreover, a contention may not attack the rules and regulations of the Commission. 10 CFR 2.758(a).

The Board must be "satisfied with respect to each contention.., that a genuine issue in fact exists." Duke Power, supra, at 812. Clarity and precision should be adequate to insure that the applicant does not have to "speculate about what a pleading is supposed to mean" such that it does not have a fair chance to defend itself. Wolf Creek, supra, at 576. The "..office of a pleading is to give notice.. of the ultimate facts and matters of law asserted." Alabama Power Co. (Alan R. Barton Nuclear Plant, Units 1,2,3 and 4), LBP-75-32,1 NRC 612 at 615 (6/13/75), emphasis added. We argue that the contentions noted above meet these criteria, as will be discussed in more detail infra.

Moreover, even where a contention is not " as narrow or specific as it should be before embarking on an evidentiary hearing... 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." Tennessee Valley Authority (Browns Ferry Nuclear Plant, Units 1 and 2), LBP-76-10, 3 NRC 209 at 221 (3/11/76).

CONTENTION I: NEED FOR POWER

Neither the Applicant nor the NRC has prepared a rigorous exploration and up-to-date, objective evaluation of the alleged need for power to be generated by WNP-2. This inadequate and deficient analysis (1) violates the National Environmental Policy Act and the Commission's regulations, and (2) results in failure to demonstrate adequate financial qualification of the Applicant to engage in the activities to be authorized by the Operating License. These deficiencies result in noncompliance with criteria for issuance of an Operating License as outlines in 10 CFR 50.57.

BASIS

The WNP-2 need-for-power analysis is based completely on the West Group forecast of growth in energy demand. The West Group forecast is compiled, with the exception of inputs from a very few utilities, of projections from member utilities which utilize a straight trend-extrapolation method of forecasting. Since the trend of growth in electricity demand was fairly high in the 1950's and 1960's, this practise has resulted in serious and consistent overforecasting since the

early 1970's, when the need-for-power analysis for WNP-2 was first developed. The ER asserts at 1.1-10 that West Group has a "long-term record of reliability in forecasting." The reality is that while forecasting by West Group may have been reliable in the decades prior to the 1970's, when growth rates were 7.7%(1950's) and 7.5%(1960's) (ER Q 8.1), reliability fell as sharply as did the growth rates beginning in the early 1970's. Betwen 1973 and 1976, actual load growth was only an average of about 4%(calculations from ER Q 1.1). Although the WNP-2 ER includes figures from which the following conclusions may be drawn, the conclusions and their implications are nowhere discussed or factored into any need-for-power analysis.

(1) West Group overprojections in 1971 resulted in overforecasting equivalent to power produced by over two nuclear plants (1315 avg. MW; see ER Table 1.1-2(a). West Group's projections in 1972 were only very slightly more accurate, resulting in an overforecast of "only" 1183 MW, slightly less than two nuclear plants.(See ER Table 1.1-2(a).) (WNP-[illegible] is expected to supply about 600 av. MW per year when operational.

(2) West Group forecasts automatically assume that "critical water" conditions exist <u>every</u> year; forecasts are based on this assumption. (ER 1.1-3) "Critical water" assumptions assume that for 42 months, drought conditions as bad as the worst recorded conditions in history occur in the Northwest; the probabability of such conditions reoccurring for such a period is in fact only about 1% (In the Matter of Portland General Electric Co., et al. NRC docket no. 50-344 (spent

fuel storage), TR. 6045). For the purposes of the West Group forecasts, therefore, West Group assumes that "no water is spilled past /hydro/ generating facilities" except for the run-of-the-river dams. (ER 1.1-3) Loads above the critical period firm resource capability are relegated to a "nonfirm" or "interruptible" status, (ER1.1-4) and are not counted in forecasts. These amounts are massive; for example, during calendar year 1976, over 21,6 million kwh of nonfirm energy were available to the region's consumers from the Bonneville Power Authority(BPA Generation and Sales Statistics, 1976, p.10), which regulates most of the region's hydro. This amount was over 25% of all energy sold by BPA in 1976, but was automatically excluded from any West Group forecast for 1976. BPA markets over half of all energy sold in the entire region. (U.S. General Accounting Office, "Region at the Crossroads- the Pacific Northwest Searches for New Sources of Electrical Energy," 8/10/78, EMD-78-76 pl p. 3.7; hereafter "GAO") This may help explain why the West Group forecast consistently forecasts "deficits" despite the region's glut of power; in 1976, a total of over 16 million kwh was sent outside the region to California. (BPA Generation and Sales Statistics, 1976, p. 10)

The combination of West Group's tendency to overforecast plus the hyper-conservative use of a "critical water" assumption has resulted in the overbuilding of the equivalent of over two nuclear plants in the region, while West Group continues to predict phantom "deficits." The effect of this masking of resources can be seen in the following example: The Director

of the Division of Economics at the Federal Energy Regulatory Commission recently told the NRC that "../f/ or 1986-87, the reduction in estimates of energy load contained in the 1978 /West Group/ Forecast represents a reduction of 1,393 MW of energy compared to the 1976 Forecast..." He alleges, however, that such reduced load estimates are not significant since "energy deficiencies nevertheless are projected to occur in every year through 1988-89." (Affidavit of Dr. Gorden T.C. Taylor, dated 4/28/78, NRC Docket No. 50-514)

Use of the "critical water" assumption in forecasting and planning system resources is entirely discretionary with the West Group member utilities. (ER 1.1-3,4) According to former Oregon Department of Energy Director L.V. Topaz,

> "BPA's water management policies are extremely conservative, maintaining a multiplicity of safety margins to absolutely assure its firm power commitments. Although secondary /nonfirm/ power generation has proven to be an extremely valuable resource, its provision is not a management priority. The BPA system could increase its total net generation by giving additional priority to secondary availability in situations where overprotecting its firm power commitments results in subsequent spillage of water without secondary power generation benefit. The system could, for example, wait until the second year of a 'critical water' situation before curtailing its secondary generation... Responsible changes in BPA water management policies could yield considerable benefits..."

(In the Matter of Portland General Electric Co. et al., NRC Docket No. 50-344, Testimony of Lionel Topaz, April, 1978, Exhibit 8, pp. 12,13.)

There is no analysis by the Applicant or the NRC of the implications-or even of the existence- of this extreme conservatism in the forecasting on which alleged need for WNP-2 power relies, in either the original ER or in the

"updates" of May, 1978.

An examination of the ER's past claims of need and the present realities rev als a disparity which can be explained by the availability of hydro to the region in excess of West Group projections. The ER at 2.5.1-3 claims that no other power from outside the region will be available in 1978- power available inside the region from BPA is never considered. The realities are that WPPSS received the following amounts of hydro energy from BPA from 1976-78:

1976	24,482 mwh	(Source: BPA Generation and Sales
1977 (CY)	28,993 mwh	Statistics, 1976, p.5; telephone
1977 (FY)	26,592 mwh	communication of 11/9/78 from
1978	44,139 mwh	Camilla Downing, BPA, Branch of Customer Services)

(3) Since the early 1970's, when construction on WNP-2 first began, a number of responsible organizations have produced more up-to-date forecasts which (1) reflect use of econometric techniques in forecasting and/or (2) incorporate electricity which may be "generated" by increased use efficiency. Although the ER "update" mentions these factors in passing, there is absolutely no discussion of how they may potentially affect evaluations of need for WNP-2 power. There is extensive discussion of the general goals of the Hydro-Thermal Power Program and operation of the region's power system, but no specific quantitative evaluation of need for the specific need for WNP-2 power beyond conclusory assertions, and reliance on West Group's projections of phantom deficits. West Group estimates a near tripling of electricity usage by the region by 1995. (ER Table Q 8.1-1) If West Group's projections of 4.5% load growth are accurate, the load require-

ments they anticipate would require the equivalent of over 35 new nuclear plants by the year 2000 (computations from figures in GAO study, p. 6.25). This projection is disputed by numerous other responsible forecasters, some of which have predicted in recent years that load growth can be halved or cut even more by appropriate and nonmandatory efficiency measures which will occur because of rising electricity prices in the Northwest.

(a) The Northwest Energy Policy Project (1977-78) sponsored by the governors of the Pacific Northwest states, outlined circumstances under which growth rates as low as 1.43% could be expected. Even NEPP's "moderate" growth scenario forecast a rate as low as 2.93%.

(b) The Skidmore, Owings and Merrill Study performed for BPA in 1976, "Choosing an Electrical Energy Future for the Pacific Northwest," demonstrated that more efficient use of electricity alone could save the region as much as one-half of the growth forecast by West Group.

(c) The Oregon Department of Energy in its 1978 Annual Report projected an average growth rate in Oregon of 2.8% in 1977-97. The results of this study were based primarily on the econometric concept that as electricity prices rise, new and better ways to conserve energy will be found and used. Growth rates forecast for Oregon are relevant, since WPN-2 energy will go to BPA, which sells to all Oregon utilities.

(d) The U.S. General Accounting Office issues in August, 1978 a study titled,"Region at the Crossroads-the Pacific Northwest Searches for New Sources of Electric Energy."

(EMD-78-96. 8/10/78) The GAO study found that assuming moderate economic growth, without power curtailments or rationing, conservation could result in surplus electricity (in megawatt years) equivalent to at least three nuclear plants by 1980 and through the year 2000. (GAO study, Fig.6.4)

(e) Dr. Richard J. Timm, past supervisor of the Energy Planning Program of the Oregon Department of Energy, prepared testimony presented before the NRC in December, 1977 which asserted that the West Group area would enjoy a surplus of 6651 MW (peak) in 1979 without the input of an additional nuclear plant equivalent to that of WNP-2(961MW); the surplus increases each year, to a high of 13,782 MW (peak) in 1986-7. (In the Matter of Portland General Electric Co., et al., Docket No. 50-344, Testimony of Richard J. Timm, Dec. 23, 1977, Schedule 14.)

(f) The Natural Resources Defense Council projected in 1977 possible growth rates in electricity usage for the Northwest as low as .47%

(g) Energy 1990, a study prepared by Seattle City Light which resulted in the city's decision to abandon plans for participation in two nuclear plants, estimated a baseline growth forecast in electricity use of 3,7% from 1974 to 1990. (Energy 1990, p. 3-8.)

(h) Recognizing the downward trend in the growth of electricity use, the International Atomic Energy Agency has cut its forecasts of world demand for nuclear power in half since 1970. In 1970, the Agency forecast a world demand of 610,000 MW; in 1976, the forecast was only 350,000. (U.S.

House of Representatives Report No. 95-1090, "Nuclear Power Costs," 23rd Report by the Committee on Government Operations, 4/26/78, p.34)

Most of the above information regarding impeaching earlier and present West Group assessments of need for power have been generated only recently, within the last several years, and after the proceedings in this matter which resulted in the construction permit for WNP-2. This information is certainly significant and important additional evidence which substantially affects conclusions reached at an earlier stage in the proceedings regarding alleged need for WNP-2 power. Applicant's attempts to "update" this information are nonspecific, general discussions of West Group regional forecasting policy and organizational structure. To the extent that any quantitative information is presented, reliance upon West Group's forecasting is complete; there is no attempt to relate general West Group data to this specific project, except through conclusory and unsubstantiated allegations of need for WNP-2 power. The ER asserts: "... according to the latest West Group Forecast, the power output of the unit will be fully utilized when it commences operation." (ER at 9.1-1) But the Applicant's own information impeaches this assertion: While the average availability factor(the percentage of time the plant is available for use) is expected to be .67, the average capacity factor(the time the plant is actually used) is projected as .59. (ER responses to NRC question 8.7 of 9/6/77) The ER makes it clear that this discrepancy is due to probable availability of hydropower, during which periods the plant will not run. (Response to Q. 8.7, supra) Moreover, both of these

factors can be expected, according to the ER, to "deviate substantially" from the quoted estimates by as much as 15 to 20 points. (ER response to Q. 8.7 at p. 84). This means that actual plant availability could theoretically be as high as .85, while actual plant use could be as low as .40. This is hardly assurance of "full utilization."

CONTENTION II: ALTERNATIVES

Neither the Applicant nor the NRC has prepared a rigorous exploration and up-to-date, objective evaluation of alternatives to the construction or operation-immediate or eventual- of WNP-2. This inadequate and deficient analysis (1) violates the National Environmental Policy Act and the Commission's regulations, and (2) results in failure to demonstrate adequate financial qualification of the Applicant to engage in the activities to be authorized by the Operating License. These deficiencies result in noncompliance with criteria for issuance of an Operating License as outlined in 10 CFR 50.57.

BASIS

Electric power rates in the Northwest are the lowest in the entire U.S. (GAO study, fig.2.3) Residents of Seattle used over twice as much electricity as Chicago residents in 1976, but paid only one-third of what Chicago residents paid. (GAO study, figs. 2.3 and 2.4)

One of the reasons residential use of electricity is so high in the Northwest (one-third of all use; GAO study fig 2.5) is that homebuilders in the region have installed much more electric space heating than is common in the rest of the nation. For example, in 1974, 45% of homes in central and western

Washington used electric space heating, compared with only 8% nationwide. (GAO study, p. 21 2.3) Hot water heating for residences also uses a large chunk of the region's electricity: about 8%, more than half of that used by the region's entire commercial sector. (GAO Fig. 2.5)

Over half of all electricity used in the region is used by industry. Most importantly, one-quarter of all electricity used in the entire Northwest is used by the huge aluminum industry. The six aluminum companies in the region use as much electricity as all other industries in the region put together-- including lumber, agriculture and paper products. The Aluminum industry buys about 30% of BPA's entire hydropower output, an amount equal to all the thermal power now generated in the area. (GAO study, pp. 1.2,3.1, Fig. 2.5, Fig. 3.1, Table 3.1) Yet the aluminum companies directly employ only about .2% of the Northwest's population. (Arthur D. Little, Inc., Summary Report to the Western Aluminum Producers, 11/74, p.9) In point of fact, according to the A.D. Little report, aluminum companies helped with WNP-2 financing (p.6)

These electricity uses-- home space and hot water heating, industrial activity, aluminum production- are areas of use which are heavily influenced by energy-efficiency activites such as cogeneration and modest use of domestic, decentralized solar and insulation technology which is currently on-shelf. That Northwest electricity consumption is concentrated in areas subject to such measures accounts in large part for the enormous savings projected from conservation by many of the load growth forecasts cited supra. But despite this fact, the WNP-2 ER mentions conservation only generally and in passing, and

devotes only 9 lines to a discussion of solar potential, as alternatives to the construction and operation of WNP-2. This is a significant omission, as may be emphasized by these quotes from the SOM study done for BPA in 1977:

> "Conservation savings are significant.../A/n amount equal to the output of approximately 11 thermal plants can be saved..."
>
> "Up to 33% of regional electrical energy use projected for 1995 can be saved."

Moreover, the same study found that making electricity available by not wasting it is six times cheaper than producing it in nuclear or coal plants, and can create "as many or more jobs." (GAO study, pp.5.5,5.6) The Natural Resources Defense Council cited supra, supported the BPA study, and even considered the conservation potential to be underestimated. The NEPP study, completed in 1978 for the governors of the Northwest states, estimated total savings of up to 40%, although 22% was considered a more likely realistic figure. (GAO study, 5.6)

According to Energy 1990, cited supra at p.2-17, the aluminum industry has committed itself to a 10% cutback in total energy usage by 1990. According to the Oregon Department of Energy Annual Report for 1978, technologies presently exist that can improve the efficiency of the aluminum production process. During World War II, it took 12 kilowatt-hours to produce a pound of aluminum; at present, 8 are used (OOOE report p.32). The newest equipment uses only about 6 and a half. (Arthur D. Little report, cited supra, at p.5) Rising costs, even with more energy efficient equipment, will discourage purchase of aluminum for frivolous and non-essential uses. 14% of all aluminum, for example, was used in 1974 for packaging.

(Arthur D. Little report, supra at p.5) Rising costs may also stimulate increased recycling of aluminum. 96% of the energy required to produce new aluminum can be saved by recycling. (Transition, prepared for the Office of the Governor, State of Oregon, January 1, 1975, p.80) It may be recalled that the aluminum industry uses 25% of all electricity generated in the Northwest (citations supra).

A recent study by the U.S. House of Representatives Committee on Government Operations ("Nuclear Power Costs," cited supra at p. 64 made the following statement concerning the potential of conservation:

> "More than half the current energy produced in the United States is wasted. For the next 25 years the United States could meet all its new energy needs simply by improving efficiency. The energy saved could relieve the immediate pressure to commit enormous resources to energy sources such as nuclear power, before all alternatives have been fully explored. Reducing energy demand through conservation would be safer, more reliable, less polluting than producing energy from other sources. Most importantly, a strong energy conservation program would save consumers billions of dollars a year." (Emphasis added)

The House Committee found that Americans waste more fuel than is used by 2/3 of the world's population (at p. 64). It concluded that the U.S. could reduce its energy consumption by 40% or more, without adverse affects on industrial output or individual lifestyles. The report reminded readers that prosperous and highly industrialized countries such as Sweden and West Germany consume 40 to 50% less energy per person than we do. ("Nuclear Power Costs, pp.64-5)

Most of the above information regarding the considerable potential of conservation as an alternative source of electricityhas been generated only recently, within the last several years, and after the proceedings in this matter which resulted

in the construction permit for WNP-2. This information is certainly significant and important additional evidence which substantially affects conclusions reached at an earlier stage in the proceedings regarding the viability of alternatives to the construction and operation of WNP-2. Nevertheless, in an "update" of the earlier ER, the present ER asserts as the sum total of its discussion that:

> "Several alternate energy sources were given consideration during the early planning stages of WNP-2. There have been no changes in the technology or economics of any of these alternatives that would indicate that the project should be abandoned in favor of an alternate generation method."

There is no substantiating discussion whatever. (ER at 9.2-1) The "update" does not mention the alternative of conservation, which was not even considered during these "early planning stages." (See original ER at 2.5.2-12 through 18.) Solar alternatives were dismissed in a nine-line "discussion" as enjoying "no feasible method" for installation within the next twenty years. Geothermal was dismissed as enjoying "no developments" as yet. Only large-scale power production possibilities were considered; there was no consideration of decentralized alternatives. (ER 2.5.2-18) The only other alternatives discussed were various high-technology and expensive options--truly "exotic" forms--such as the LMFBR, MHD, fusion, and coal gasification.

CONTENTION III: COST-BENEFIT ANALYSIS

Neither the Applicant nor the NRC has prepared a rigorous, up-to-date, objective cost-benefit analysis of WNP-2. The inadequate and deficient analysis presented (1) violates the National Environmental Policy Act and the Commission's regulations,

and (2) results in failure to demonstrate adequate financial qualification of the Applicant to engage in the activities to be authorized by the Operating License. These deficiencies result in noncompliance with criteria for issuance of an Operating License as outlined in 10 CFR 50.57.

BASIS

(The basis for this contention will be mailed under separate cover.)

CONTENTION IV: SEISMIC

New information has come to light as a result of activities at the WNP-2 site that indicate that the selected site is unsuitable for the project, contrary to assertions by the Applicant in ER 9.3-1 and PSAR 1.4-5-7. The present inadequate and deficient seismic analysis violates the National Environmental Policy Act and the Commission's regulations, resulting in noncompliance with criteria for issuance of an Operating License as outlined in 10 CFR 50.57.

BASIS

Petitioners have received reports to the effect that the WNP-2 site lies directly over a geological fault. Such a finding is on its face evidence which would substantially alter conclusions already reached as to the safety and environmental effects of WNP-2 operation. Sources of this evidence have been reluctant to come forward with their findings; petitioners are continuing efforts to remedy this.

CONTENTION V: QUALITY ASSURANCE

Applicant has failed to meet Quality Assurance criteria during the construction of WNP-2. Applicant has failed to demonstrate its future competence in meeting said criteria.

BASIS

A news report by the Associated Press ("Memo on unsafe

girders at Hanford N-plant went unheeded", Eugene Register-Guard, Sunday, October 8, 1978) indicates on its face that WPPSS has not been able to meet safety, construction, engineering, and quality-control criteria. A former WPPSS metallurgist, Don Hetzel, is quoted as saying "we had what amounts to a total breakdown in quality control in this area." By its failure in this instance, Applicant has cast serious doubts as to whether it is technically qualified to operate the plant, and therefore the requirements of 10 CFR 50.57 have not been met.

CONTENTION VI: LOW-LEVEL RADIATION

Applicant has not adequately demonstrated:

) that the standards of 10 CFR 20.101 for exposure of individuals to radiation in restricted areas will be met;

) that the standards of 10 CFR 20.103 for exposure of individuals to concentrations of radioactivity in air in restricted areas will be met;

) that the standards of 10 CFR 20.105 for permissible levels of radiation in unrestricted areas will be met;

) that the standards of 10 CFR 20.106 for release of radioactivity in effluents to unrestricted areas will be met.

Applicant has thus failed to provide adequate assurance that all provisions of NRC regulations have been met, and therefore 10 CFR 50.57(3)(b) requires that an operating license not be issued. Applicant has further not provided reasonable assurance that the health and safety of the public is not endangered by radioactivity to be released by WNP-2, and therefore has not met the requirement of 10 CFR 50.57(3)(a).

BASIS

The history of commercial nuclear power plants in the United States shows numerous instances of unplanned, accidental exposures to, and/or release of, radioactivity in excess of permissible levels. Applicant has not demonstrated that it will be able to prevent such occurrences. Applicant has also failed to consider the additive effects of emissions from WNP-2 along with those from other installations at the Hanford Reservation, including the N reactor, Purex plant, other proposed WPPSS nuclear projects, and the large volumes of low-, intermediate-, and high-level radioactive wastes currently being stored. Such effects would endanger the lives, health, and safety of HCP members and the public at large, yet these effects have not even been considered by the Applicant. It is clear, then, that the requirement of 10 CFR 50.57 (3)(a) has not been met; accordingly, license to operate WNP-2 should be denied.

Petitioners will present evidence which demonstrates that exposure to so-called routine levels of radiation lead to increased incidence of cancer, birth defects, and other deleterious health effects, both to nuclear power plant workers and to the general public. Studies include, but are not limited to, those of Drs. Helen Caldicott, John Gofman, Arthur Tamplin, Thomas Mancuso, Thomas Najarian, and Sr. Rosalie Bertell. This substantial body of evidence clearly indicates that operation of WNP-2 will endanger the health and safety of the general public.

There is currently underway by the Federal government a review of radiation exposure standards; a likely outcome of this is a reduction of permissible radiation levels. Applicant has not shown that it anticipates such reductions, nor that it will be able to meet the new standards. When such standards go into

effect, Applicant will be unable to maintain an adequate and competant work force at a reasonable cost. This consideration affects Applicant's cost-benefit analysis as well.

WHEREFORE, petitioners pray the Atomic Safety and Licensing Board for an order as follows:

1) Granting them status as intervenors as of right in operating license proceedings herein, with full opportunity to participate in all issues in contention; or

2) In the alternative, granting them status as intervenors as of discretion, with full opportunity to present proof and otherwise participate in full hearing on all contentions her raised by them.

Respectfully submitted,

Greg Darby, pro se, for
Susan Garrett, and for
Hanford Conversion Project

ST[illegible] OF OREGON)
)
County of Tillamook)

I, A. C. Roll, being duly sworn, on oath, depose and say:

I am a member of the Hanford Conversion Project. As such, I authorize the Hanford Conversion Project, Susan M. Garrett, and Helen Vozenilek to represent me as intervenors in the matter of Washington Public Power Supply System (WPPSS Nuclear Project No. 2).

I own land near Kennewick, Washington, approximately 10 to 15 miles down the Columbia River from the site of the proposed WPPSS 2 reactor. I own two houses at that site, which I rent. One is being commercially farmed. Livestock is also pastured on my land.

I feel that the new reactor would pose a threat to health and safety and the condition of the environment. As such, it would make my land harder to rent and might decrease its rental value. I feel that an accidental release of radiation would damage my land, the people present on it, the crops grown there, and the livestock raised there.

/s/ A. C. Roll

Subscribed and sworn to before me this 08 day of November, 1978.

Mary Williams
Notary public for Oregon
My commission expires: 06-30-81

A. C. ROLL
LAWYER

P. O. BOX NO. 1
OCEANSIDE, OREGON 97134

APPOINTMENT ONLY

TELEPHONE AC 503-842-7888
(CAPE MEARES)

November 7, 1978

Doreen L. Nepom, Attorney
101 Kellogg Building
1935 S.E. Washington
Milwaukie, OR 97222

Re: Hanford Conversion Project

Dear Ms. Nepom:

This is my application for project membership per your letter, together with authorization to represent me in Washington Public Power Supply System, et al; WPPSS Nuclear Project No. 2 before the Nuclear Regulatory Commission, Atomic Safety and Licensing Board.

My family and I have owned two farms about three miles southeast of Kennewick on the downside of the Columbia River about 10 or 15 miles from where I understand proposed No. 2 reactor is to be operated since long before the original Hanford project was built.
One farm is 12 acres under cultivation; the second farm about 6 acres, consisting primarily of pasture land and a private garden. Both farms have rental houses, are occupied and are dependent upon well water for human consumption as well as irrigation. About 10 persons reside on the two places, as well as livestock on both.

Only recently the sewage treatment plant near Kennewick leaked, and it was officially reported to me that the underground water supply had been contaminated for miles and was unfit for human consumption. This included the area surrounding my farms, neither of which were then affected. It is publicly reported that nuclear waste has escaped in the Hanford area over recent years. I believe that, if this has occurred, and if it has not occurred, it will occur, the underground water table very near the surface in my area either is now or will become dangerously contaminated and render my land worthless.

I am now apprehensive about the health and safety conditions of my property due to the Hanford plant. I am in actual fear for my own well-being when visiting the farms for inspection. The new reactor and all subsequent additions and enlargements necessarily increase the hazard.

In my opinion, present property value, both sale and rental, is markedly increased in the short-term by virtue of the atomic project. The extraordinary influx of workers into

A. C. ROLL
LAWYER

the area has driven land and housing prices out of sight. My conviction is that these are false values and that both farms will become totally worthless because of the Hanford project, including the new reactor.

I not only fear underground water and air atomic contamination of my property and the entire area which will ultimately destroy all life; I believe that an explosion is expectable which will blow the entire area into smithereens, including all of my property and everything on and near it.

You are free to use this letter as part of the project presentation if you wish.

Very truly yours,

ROLL AND ROLL LAWYERS

A. C. ROLL

ACR/tah

Enclosures: Affidavit
Tax Statements

BENTON COUNTY 1978
REAL ESTATE TAX AND ASSESSMENT

PARCEL NUMBER ROLL	PARCEL NUMBER MAP	MISC. DISTRICTS	LEVY	VALUATION	CODE
8	187	11	15.9000	36,240	1731M

LOT	BLOCK	SECT	TWP	RNG	9.70

Chicago Ten Acre Tracts Tract 23

RETIRED OR DISABLED HOME OWNER—SEE OTHER SIDE.

IF PROPERTY HAS BEEN SOLD PLEASE FORWARD TO NEW OWNER

THIS IS YOUR RECEIPT
KEEP FOR YOUR RECORDS

TOTAL DUE AND PAYABLE FEB. 15
AFTER APRIL 30, TOTAL TAX MUST BE
PAID, PLUS 8% INTEREST

YOU MAY ELECT TO MAKE TWO PAYMENTS
PAYMENT AMOUNTS MAY DIFFER DUE
TO FULL PAYMENT REQUIREMENT

1ST PAYMENT	2ND PAYMENT	TAX AND ASSESSMENTS
		REAL
PAY BEFORE APR 30	PAY BEFORE OCT 31	TOTAL AMOUNT

IRRIGATION NOT INCLUDED — SEPARATE BILLING

AFTER APR 30, CALL OFFICE FOR INTEREST AMOUNT
PHONE TRI-CITIES 545-2450 - PROSSER 786-2255

MAKE REMITTANCES PAYABLE TO:
ELLEN BERNDT
Benton County Treasurer Box 630 ... Prosser, Wash. 99350

BENTON COUNTY 1978
REAL ESTATE TAX AND ASSESSMENT

PARCEL NUMBER ROLL	PARCEL NUMBER MAP	MISC. DISTRICTS	LEVY	VALUATION	CODE
8	189	11	15.9000	16,690	1731M

LOT	BLOCK	SECT	TWP	RNG	1.00

Chicago Ten Acre Tracts N 2.25 Acres Tract 24

RETIRED OR DISABLED HOME OWNER - SEE OTHER SIDE.

THIS IS YOUR RECEIPT
KEEP FOR YOUR RECORDS

TOTAL DUE AND PAYABLE FEB. 15
AFTER APRIL 30, TOTAL TAX MUST BE
PAID, PLUS 8% INTEREST

YOU MAY ELECT TO MAKE TWO PAYMENTS
PAYMENT AMOUNTS MAY DIFFER DUE
TO FULL PAYMENT REQUIREMENT

1ST PAYMENT	2ND PAYMENT	TAX AND ASSESSMENTS
		REAL
PAY BEFORE APR 30	PAY BEFORE OCT 31	TOTAL AMOUNT

BENTON COUNTY 1978
REAL ESTATE TAX AND ASSESSMENT

THIS IS YOUR RECEIPT
KEEP FOR YOUR RECORDS

PARCEL NUMBER ROLL	PARCEL NUMBER PAR	MISC. DISTRICTS	LEVY	VALUATION	CODE
8	146	11	15.9000	10,290	1731M

TOTAL DUE AND PAYABLE FEB. 15
AFTER APRIL 30, TOTAL TAX MUST BE PAID, PLUS 8% INTEREST

LOT	BLOCK	SECT	TWP	RNG	2.42

Chicago Ten Acre Tracts S 1/2 E 1/2 S 10 Acres

RETIRED OR DISABLED HOME OWNER—SEE OTHER SIDE.

OWNER OF RECORD ROLL ISAAC
ROLL A C
P. O. BOX 1
OCEANSIDE OR 97134

IF PROPERTY HAS BEEN SOLD PLEASE FORWARD TO NEW OWNER

YOU MAY ELECT TO MAKE TWO PAYMENTS
PAYMENT AMOUNTS MAY DIFFER DUE TO FULL PAYMENT REQUIREMENT

1ST PAYMENT	2ND PAYMENT	TAX AND ASSESSMENTS
		REAL
PAY BEFORE APR 30	PAY BEFORE OCT 31	TOTAL AMOUNT

IRRIGATION NOT INCLUDED — SEPARATE BILLING

AFTER APR 30, CALL OFFICE FOR INTEREST AMOUNT
PHONE: TRI-CITIES 545-2450 · PROSSER 786-2255

MAKE REMITTANCES PAYABLE TO:
ELLEN BERNDT
Benton County Treasurer Box 630 ... Prosser, Wash. 99350

BENTON COUNTY 1978
REAL ESTATE TAX AND ASSESSMENT

THIS IS YOUR RECEIPT
KEEP FOR YOUR RECORDS

PARCEL NUMBER ROLL	PARCEL NUMBER PAR	MISC. DISTRICTS	LEVY	VALUATION	CODE
8	230	11	15.9000	15,940	1731M

TOTAL DUE AND PAYABLE FEB. 15
AFTER APRIL 30, TOTAL TAX MUST BE PAID, PLUS 8% INTEREST

LOT	BLOCK	SECT	TWP	RNG	5.40

Chicago Ten Acre Tracts E 6 Acres S of Drain

RETIRED OR DISABLED HOME OWNER—SEE OTHER SIDE.

IF PROPERTY HAS BEEN SOLD PLEASE FORWARD TO NEW OWNER

YOU MAY ELECT TO MAKE TWO PAYMENTS
PAYMENT AMOUNTS MAY DIFFER DUE TO FULL PAYMENT REQUIREMENT

1ST PAYMENT	2ND PAYMENT	TAX AND ASSESSMENTS
		REAL
PAY BEFORE APR 30	PAY BEFORE OCT 31	TOTAL AMOUNT

IRRIGATION NOT INCLUDED — SEPARATE BILLING

AFTER APR 30, CALL OFFICE FOR INTEREST AMOUNT
PHONE: TRI-CITIES 545-2450 · PROSSER 786-2255

MAKE REMITTANCES PAYABLE TO:
ELLEN BERNDT
Benton County Treasurer Box 630 ... Prosser, Wash. 99350

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of

WASHINGTON PUBLIC POWER SUPPLY SYSTEM, et al. (WPPSS Nuclear Project No. 2)	)))	Docket No. 50-397-OL

AFFIDAVIT OF TERRY SoRELLO

I, Terry SoRello, do affirm and state the following:

1. That I am a chairperson of the Hanford Conversion Project, which seeks leave to intervene in the aforementioned proceeding;

2. That I am authorized in my capacity as chairperson to appoint representatives of the Project;

3. That Greg Darby, 2425 S.E. 24th, Portland, OR 97214, is a member of Hanford Conversion Project;

4. That Greg Darby is authorized to represent the Project in the aforementioned proceeding;

5. That Greg Darby is replacing Helen Vozenilek as a representative of the Project in the aforementioned proceeding.

Dated November 10, 1978

Terry SoRello
Chairperson
Hanford Conversion Project

SUBSCRIBED AND SWORN TO before me this 10th day of November, 1978

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
WASHINGTON PUBLIC POWER SUPPLY SYSTEM	)	Docket No. 50-397 OL
	)	
(WPPSS Nuclear Project No.2)	)	

AFFIDAVIT OF

I, Terry Stratton, hereby certify the following:

1. I am a member of the Hanford Conversion Project.

2. I reside at 1202 "A" Street, Ellensburg, WA 98926

3. My place of residence is located approximately 80 miles from the site of WPPSS Nuclear Project No. 2.

4. My interests in the above-captioned proceeding are as discussed in the accompanying Amended Petition to Intervene.

5. I have the following specific personal, financial and property interests in this proceeding:

- THE HEALTH OF MY MOTHER, FATHER, GRANDMOTHER, AUNTS, UNCLES, COUSINS AND FRIENDS
- THE ECOLOGICAL INTEGRATY OF THE COLUMBIA BASIN AREA.

6. I authorize Susan M. Garrett, Helen Vozenilek, Terry SoRelle, or any other person designated by the Hanford Conversion Project Coordinating Committee to represent myself and my interests in the above-captioned proceeding.

Respectfully submitted,

Terry Stratton

TERRY STRATTON

Subscribed and sworn to before me this 6th day of Nov., 1978

Notary Public

My Commission expires 1/2/82