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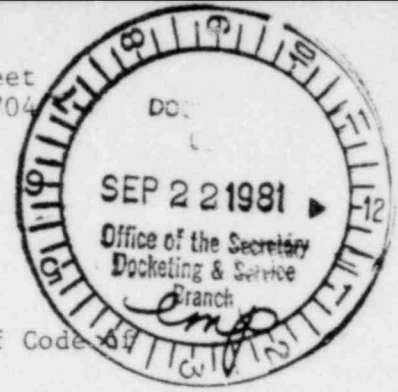

Secretary of the Commission
United States Nuclear Regulatory Commission
Washington DC 20555

Re: Proposed amendments to Part 51 of Code of
Federal Regulation, Title 10

Dear Sir:

I am writing relative to your news release of August 3, 1981, in which the proposal to amend the regulations to eliminate consideration of need for power and alternate energy sources from the review process is announced.

I firmly believe that we need all sources of energy, and that full consideration should be given to nuclear energy, the available alternatives, and the costs and hazards of not having energy available. Included in the analysis of fossil fuel alternatives should be the consideration of the predictable effect of carbon dioxide buildup in the earth's atmosphere, if such effects can be proven.

We here in the desert southwest are very dependent upon electrical energy sources for our water, for the prevention of food poisioning, and for air conditioning, which is necessary for life part of the year. The federal government should certify which nuclear plant designs are safe, and proceed with licensing of these plants where it makes economic sense. We should also continue full encouragement of solar energy alternatives and conservation.

I hope the Commission will recognize its obligation to give consideration of the available energy alternatives and of the need for energy in its review of applications to operate nuclear power plants, and that other federal agencies will give the same consideration to decisions for the construction of commercial coal, oil, and natural gas-fuelled power plants.

Sincerely,

George W. Nelson

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COMMENTS ON NRC PROPOSED RULE, "Need for Power and Alternative Energy Issues in Operating License Proceedings," 46 F.R. 39440. Prepared by Daniel F. Read.

The Environmental Law Project is opposed to this rule as opposed. Need for power and alternatives should be part of all proceedings. The danger inherent in nuclear plant operation, which the elaborate licensing proceedings of the NRC implicitly recognize, is so great that it should be used only as a source of last resort in meeting our energy needs. It appears that the NRC is once again getting too involved in the promotion of nuclear industry and licensing plants that it is not only failing to give primary consideration to safety issues,[1] but also to more fundamental issues of whether we really need more nuclear power plants. This rule is an unfortunate attempt to keep these issues from being discussed: the fundamental needs of society are not to be quickly dealt with and then left unquestioned, but they should always be kept in mind and discussed openly at every stage of the process.

The NRC contends that need for power is adequately handled in the proceedings for construction licenses. This overlooks a fundamental problem with nuclear construction, that it normally takes ten to twelve years to complete a nuclear plant. The NRC would have us believe that the need for power does not change over that period, an assertion which borders on preposterous. The footnote on 46 F.R. 39441 cites Amory Lovins' book Energy/War: had the writer read on in that book, he would have found an interesting and highly relevant table at page 99.[2] The table, attached as appendix 1, shows that energy consumption predictions moved from "beyond the pale" to "conventional wisdom" within six years' time; the beyond the pale prediction dropped almost 75%, while the conventional wisdom prediction dropped about 40%. These were not just numbers drawn out of hats, but forecasts by the most knowledgeable and in-

formed persons in the energy field. Closer to home for us North Carolinians, Mr. William Lee of Duke Power Company testified in 1974 that Duke's forecast for peak summer demand in 1982 had dropped almost 20% between 1970 and 1974 from 18,600 MW to 15,000 MW.[3] By 1981 this forecast was significantly lower, down in the range of 12,000 MW,[4] and Duke's "Project 81" was nowhere near completion. Of the six nuclear plants in that project, three at Perkins have never been begun and of the three at Cherokee only one is 10% complete and construction there has stopped indefinitely.[5] Duke's management insisted in 1974 that these plants would be needed in 1981,[6] and that the only reason they were postponed was financial.[7] Needless to say, there have been no blackouts in North Carolina, although the record still indicates that these plants are "needed." The NRC would preclude discussion of these issues at the operating license stage, however. In other words, the actual need for Carolina Power and Light's Shearon Harris Unit 4 would not be discussed when the operating license hearings came up: only the license for Unit 1 would require an environmental report according to the new §51.21, and this need not discuss need. This despite the fact that Harris was first announced in 1971 and Unit 4 will not be complete until 1994,[8] a period of 23 years! Even if the Commission requires need to be discussed in the Unit 1 proceeding, that proceeding may start anytime now (although the Unit is only about 50% complete): only about 12 years before the projected startup of Unit 4. To preclude continuing discussion of need for power under these sort of circumstances is ridiculous.

Although utility executives have complained that delays in construction are caused by regulatory uncertainty, the Department of Energy concluded that 80% of postponements were due to lack of demand (what better argument for continuing discussion of need?) or lack of adequate financing.[9] In fact, utilities in North Carolina are having such a difficult time

financing nuclear construction that they could not do it without North Carolina's sweeping construction-work-in-progress law. This would suggest that perhaps alternatives might be more cost-effective: Duke's Donald Denton testified that conservation enjoyed a 7 to 1 cost advantage over new nuclear construction.[10] But again, these issues are closed out under the proposed rule. Wood and solar energy are plentiful here in North Carolina, and promise to become more cost-effective as they become more developed, while nuclear energy has consistently become less cost-effective. Yet over the ten or so year construction period these issues, once discussed in the initial proceeding, are to be closed out forever. The NRC maintains that this will not be a problem, as this has never been found to be a problem in an operating license proceeding. We think the NRC's record in this respect is not necessarily commendable, and may reflect more of a promotional mentality than a consistent serious consideration of alternatives.[11] It should not be overlooked that these alternative energy strategies, like wood, solar, conservation, biomass, etc., typically can be brought on line much more quickly than nuclear and thus are much more responsive to sudden changes in demand.

The Commission admits all this may be true, but that it is still more cost-efficient to replace older "less-economical" generating capacity. Looking at CP&L's experience over the past two years, it is doubtful that the newer Brunswick plants have actually proved to be more economical. Rates have gone up and up and up again, and further outages at the power plant promise to drive rates up still further.[12] The assumption that new nuclear generating capacity is inherently more economical is therefore debateable, and should be debated at every stage of the licensing process. Once the chain reaction is started, the plant begins to produce tons of high-level radioactive waste and plutonium, for which there

is no known safe method of disposal. Nuclear utilities are fond of pointing out the "savings" they have afforded their customers by going nuclear, but the costs of disposing of this waste are rarely computed into operating costs. In addition, the chain reaction slowly reduces the plant itself to waste of varying levels of radioactivity: there have been problems with finding proper ways to dispose of waste safely at places like Maxey Flats and West Valley, and decommissioning has yet to be seriously confronted as a financial and practical problem. Again, we question whether it really is more economical to replace existing generating capacity or to forego conservation measures in favor of starting up new nuclear plants. In addition, some people, including the Environmental Law Project, consider it morally reprehensible to produce hundreds of tons of waste that we have no idea of what to do with, especially when more environmentally benign methods of meeting energy needs are available. In addition, replacement of existing capacity in North Carolina may actually mean a decline in efficiency since nuclear will go into base load use, and retire highly efficient coal plants, like Belews Creek or Roxboro, to less efficient cycling use.[13]

In sum, we oppose the new rule, (1) because need for power should always be discussed in all licensing proceedings, (2) because of the time lag in the various stages and the changing nature of energy demand, (3) because the nuclear to alternative cost ratio is still changing in favor of alternative energy, (4) because alternatives to nuclear are much more responsive to fluctuation in demand, and (5) because our experience in North Carolina leads us to doubt that replacement of existing generating capacity is cheaper or environmentally or morally desireable.

NOTES

1. Kemeny Commission Report, p. 51.
2. Harper Colophon edition.
3. North Carolina Utilities Commission, Docket E-7 Sub 166, May 5, 1974.
4. "Analysis of Long Range Needs for Electric Generating Facilities in North Carolina," N.C. Utilties Commission Public Staff Report, 1981, App. II.8, p. 2.
5. "Duke Units Stalled", Raleigh News and Observer, May 15, 1981.
6. Franz Beyer, N.C. Utilities Commission, Docket E-7 Sub 166, Jan. 10, 1975.
7. Ibid.
8. "CP&L delays Harris plant startup", Raleigh News and Observer, Jun. 19, 1980.
9. "Future worries nuclear industry", Raleigh News and Observer, Nov. 27, 1980.
10. N.C. Utilities Commission, Docket E-100 Sub 40, Mar. 19, 1981.
11. See Note 1.
12. "Nuclear plant shutdown to increase CP&L rates", Raleigh News and Observer, Aug. 6, 1980; "Vepco, CP&L spring bills to show less price disparity", Jan. 31, 1981; "CP&L asks rate hike of 16.4%", May 16, 1981; "CP&L eyes rate hike for Dec.", Jul. 8, 1981; "CP&L requests increased rates," Jul. 21, 1981; "CP&L audit oredered by utility panel", Jul. 29, 1981; "CP&L's gimpy plants", editorial, Aug. 20, 1981; "Many shutoffs seen for CP&L reactors", Aug. 19, 1981.
13. See prefiled testimony of Wells Eddleman, N.C. Utilties Commission, Docket E-7 Sub 314.

APPENDIX 1

al times less than building a new power station to do sk.[212]

the savings

ort, just the two largest single terms in improved US ductivity, just in the 1980s, and pursued to a level far hat is technically feasible or economically optimal, ther displace virtually all US oil imports (at the 1979 . They would "supply" energy at more than six times liverable by the maximum US nuclear capacity physi- vable in the same period[214]—at a small fraction of the hey would do this before a reactor ordered today could energy whatsoever[215].

he first glimmerings of this opportunity penetrate offi- ousness, projections of future needs for energy, hence facilities to supply it, have dropped precipitously, af- atively little by reduced expectations of economic ne way of illustrating this is a matrix of various estimates of approximately how much total primary United States would need in the year 2000:

by D. Olivier[114], personal communication, March 1980. For a less example, see F. S. Langa, *New Shelter* 41-48, April 1980, Rodale us PA).

s rate averaged about 7.8 million barrels per day and was falling fast; age should be about 6.2. The 1977 and 1978 levels were 8.6 and 8.0

"Supply Model" (see Fig. 1 caption) predicted in early 1980 a sible US nuclear capacity of 155 GWe in 1990. At the cumulative city factor (for reactors >800 MWe) of 0.55 and a 90% transmission ion efficiency, 155 GWe would deliver 673 TWe-h/y or the heat 1.14 million barrels of oil per day (1 bbl = 5.8 GJ). Improving 100 from 15 to 60 mi/gal, if each is driven an average of 10,000 mi/y, 44 million barrels of gasoline, or about 3.6 million barrels of crude oil, roving 30 million light trucks (each driven 9,400 mi/y) from 12 to 60 save an extra 1.4 million barrels of crude oil per day. These savings bl/d from weatherization[210] would total 7.5 Mbbl/d, or about 96% of 0 rate of net oil imports, or about 6.6 times the maximum nuclear ergy contribution, or over twice the nuclear contribution if that were med to substitute directly and entirely for oil-fired power stations. s actually burned about 1½ Mbbl/d in 1979[91].) Of course this calcula- other oil savings, including those from the 1980s' near-doubling of jet iency.

to the US Energy Information Administration, a US reactor typi- 10.4–12.7 (mean 10.5) years to build, of which around 7.2–9.2 years is ruction (including a half-year each for site preparation and power

Selected estimates of approximate US primary energy demand in 2000

(q/y = 10^{15} BTU/y ~ 10^{18} J/y ~ 33 GWt)

Year in which analysis was published	Sociological category of analyst: *Beyond the pale*	*Heresy*	*Conventional wisdom*	*Superstition*
1972	125[a]	140[b]	160[c]	190[d]
1974	100[e]	124[f]	140[g]	160[h]
1976	75[a]	89[i] – 95[j]	124[g]	140[h]
1978	33[k]	63[m] – 77[m]	95[n] – 96[m] – 101[p]	123[q] – 124[r]

[a] A. B. Lovins speeches (in 1972, J. P. Holdren was perhaps the only analyst estimating below 100 q/y)
[b] Sierra Club (a major national conservation group)
[c] US Atomic Energy Commission
[d] Federal Power Commission, Bureau of Mines, other Federal agencies (some were reportedly as high as 300 q/y, and Exxon was about 230 q/y)
[e] Ford Foundation Energy Policy Project, "Zero Energy Growth" scenario
[f] Ford Foundation Energy Policy Project, "Technical Fix" scenario
[g] US Energy Research & Development Administration (forerunner of USDOE)
[h] Edison Electric Insitute (and, generally, Electric Power Research Institute)
[i] F. von Hippel & R. H. Williams (Princeton University)
[j] A. B. Lovins, *Foreign Affairs*, October 1976
[k] J. Steinhart (University of Wisconsin) for 2050 with lifestyle changes
[m] CONAES Demand & Conservation Panel (*Science*, 14 April 1978), scenarios I–III (II and III are pure technical fixes) for 2010 assuming doubled real GNP
[n] USDOE Domestic Policy Review of Solar Energy, assuming world oil price (1977$) of $32/bbl by the year 2000 (this is scarcely below the 1980 price)
[p] A. M. Weinberg (Institute for Energy Analysis, Oak Ridge), "low" case
[q] As ref. n, but averaging the $18/bbl and $25/bbl cases
[r] R. Lapp (prominent US advocate of nuclear power and of fixed energy/GNP ratio)

Source: A. B. Lovins as cited by E. Marshall, *Science 208*:1353–56 (20 June 1980), with typographical errors corrected and refs. *n* and *q* added

Such a matrix shows a pleasingly symmetrical pattern: every two years, entries drop one slot towards the lower right, gaining one notch in respectability. Today the highest official estimates of US

ascension) after 2.2-3.5 years of licensing. We do not count here the several years' operation needed to recoup the energy invested in the reactor and its first fuel load, according to Westinghouse and EdF data (see Part Two, Appendix in A.B. Lovins & J. Price, *Non-Nuclear Futures*, Ballinger (Cambridge MA), 1977 and Harper Colophon (NY), 1980).