

August 29, 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
DAIRYLAND POWER COOPERATIVE)	
(La Crosse Boiling Water Reactor))	Docket No. 50-409 (FTOL Proceeding)

NRC STAFF ANSWERS TO BOARD QUESTIONS
ASKED AT PREHEARING CONFERENCE

During the June 19, 1980 second prehearing conference, the Board asked several questions of the Staff which were to be answered in writing. The following answers are provided in response to questions recorded in the transcript of the conference.

1. Question

The Board believes that the FES Section 5.8 contains an out-of-date Table S-3. (Tr. 1039).

Response

The Table S-3 in the LACBWR FES pp. 5-22-5-24 is the current table as shown in 10 CFR Part 51.

2. Question

The Board asked the manner of computing offsite doses from airborne effluents in accordance with Reg. Guide 1.109 stated in the FES because it is the Board's understanding that Reg. Guide 1.109 assumes a flat terrain whereas the area surrounding LACBWR is not flat. The Board requests justification by the Staff for using computations based on Reg. Guide 1.109 (Tr. 1060).

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Response

Except for the annual external dose from activity deposited on the ground plane, all of the dose models in Regulatory Guide 1.109 are independent of the type of terrain. The effect of changes in topography on dose estimates are taken into account in the NRC's meteorological models which are described in USNRC Regulatory Guide 1.111.

The meteorological dispersion factors that were calculated for LACBWR were based on an elevated release corrected for standard open terrain factors.

The atmospheric transport and dispersion model in Regulatory Guide 1.111 does incorporate the effects of terrain. This model was used in conjunction with the terrain heights in the LACBWR region to determine the dilution factors used in the dose assessment, as indicated in the FES Appendix E.

Annual external dose from direct exposure to activity deposited on the ground plane is based on the conservative assumption that the individual is exposed to an infinite plane containing deposited radioactive materials. Table 5.5-3 of the FES clearly shows that estimated doses from this pathway were insignificant (i.e., less than 0.01 mrem/yr).

3. Question

The Board requests information on the environmental impacts of the alternatives to the continued operation of LACBWR discussed in the FES Table 8.1-1, i.e., replacement purchase or greater use of other DPC plants. (Tr. 1097-98).

Response

The Staff is providing copies to the Board and Parties of NUREG-0332 entitled "Health Effects Attributable to Coal and Nuclear Fuel Cycle Alternatives" as well as an article on the same subject recently published in the Journal of the American Medical Association.

4. Question

The Board inquires as to why in Table 8.1-1 a charge is given to loss of fuel in core (for early shutdown) but no charge for unused fuel for a 20-year operation. The Board believes that some fuel is always left over. (Tr. 1099)

Response

The \$3 million cost of fuel left in the core is over and above the fuel which would normally be left in the core under conditions of a planned decommissioning. If decommissioning is anticipated a year or two prior to decommissioning, the fuel can be rearranged in the core, lower enriched fuel would be used for the last fuel reload, and other adjustments can be made. The \$3 million represents the difference in fuel loss between an anticipated and an unanticipated permanent shutdown.

5. Question

The Board inquires as to whether there would be any difference in decommissioning cost after only 10 years of operation rather than twenty years. (Tr. 1100)

Response

There is a higher cost for decommissioning in 10 years. This would be about \$10.3 million, rather than \$8.8 million for 20 years. The reason is that a

sinking fund which is assumed used to build up funds for decommissioning earns interest. There is a shorter time to earn interest in the case of 10 years, thus more has to be put into the fund.

6. Question

The Board inquires about the validity of the p. 8-1, FES assumption that coal and nuclear fuel costs escalate 3% faster per year than general inflation since the Board is under the impression that a glut of coal and uranium now exists. (Tr. 1108).

Response

The Staff attempts to forecast over a number of years. We believe that since both nuclear and coal are fixed resources, their continued use will gradually deplete the resource and prices will rise. A lower rate of use of either resource compared to expectations will result in a lower rate of price increase. Current market gluts are expected to be of short duration.

7. Question

The Board inquires as to whether the participation sale of 170 MW noted in Table 8.2-6 refers to the 175 MW referenced in the need for power hearing during the SFP proceeding as having been sold to Cooperative Power Association and which Table 8.2-1 also indicates as sold. (Tr. 1109)

Response

All of the data sources cited above refer to the same participation sale to the Cooperative Power Association (CPA). CPA is entitled to 50% of the capacity of the Genoa No. 3 unit which results in a participation sale of 175 MW. This is the value reported in Table 8.2-1 and referenced in the SFP proceedings. The 170 MW participation sale reported in Table 8.2-6 is based

on a DPC filing to R. Geckler, US NRC, December 14, 1979. The 170 MW is what CPA receives at point of delivery with the 5 MW difference attributable to transmission losses. Thus, the 175 MW reflects what DPC parts with, and the 170 MW is what CPA receives.

On closer examination, the Staff concludes that the 175 MW value would have been more appropriate for inclusion in Table 8.2-6 because DPC's capacity should be adjusted by what it sells and not by what CPA receives. Had the 175 MW figure been used here, the capacity estimates reported in Table 8.2-6 would all be reduced by 5 MW and the resulting reserves as a percentage of peak demand would all be marginally lower.

8. Question

In Table 8.2-6, was subtraction made of 260 MW contracted to Northern States Power noted in Table 8.2-1? (Tr.1109)

Response

No subtraction was made in Table 8.2-6 to account for the 260 MW contracted to Northern States Power. This is because Table 8.2-6 shows DPC's capability during the winter peaks of 1980-81 through 1986-87, and Northern States Power has not contracted to receive any of this capacity during these winter peak periods. The participation sale to Northern States Power is identified as 260 MW in the summer of 1979, 108 MW in the summer of 1980, and 35 MW in the summer of 1982. These sales can in no way affect the winter reserve margins depicted in Table 8.2-6.

9. Question

What will be the economic cost to DPC of retrofits required by NRC?
(Tr. 1110)

Response

The Staff has no information on the dollar costs of the retrofits required for the LACBWR.

10. Question

Does the solar power referenced in FES § 9.2 mean a central power source or power at the point of use? (Tr. 1110)

Response

Section 9.2 refers to other generating alternatives to LACBWR and would mean a central power source.

11. Question

The Board requests more information on the DPC load control system.
(Tr. 1110)

Response

On May 1, 1980, the Rural Electrification Administration (REA) approved a loan of \$12.5 million for DPC to initiate an extensive central load control program. The following description of the proposed program was provided by REA.

Dairyland plans to install a centralized load control system which will have the capability and flexibility to accommodate the individual needs of its 29-member distribution cooperatives. The planned system will be constructed

in a 3-tiered hierarchy. The highest level and main control interface would be the central control unit located in La Crosse. This interface would permit the automatic initiation of load control strategies at predetermined load levels. The intermediate level consists of remote signal propagation equipment which receives commands from the central computer via microwave or leased telephone. This equipment determines the means of communication to reach the lowest level in the system hierarchy, the load control receiver located at the customer site. The loads to be controlled will be residential electric space heating, mainly in houses containing dual-fuel heating or heat storage systems, and residential electric water heaters.

Dairyland intends to have the load control system fully operational, with 10,000 control points installed, by 1983. Dairyland will distribute the receivers to its member cooperative on a pro-rata basis.

12. Question

Has the staff inquired as to whether the alternatives of replacement power purchase or higher production from other DPC plants postulated in FES section 8 are actually available? (Tr. 1111)

Response

In Section 8.1 of the LACBWR FES the Staff considers the decommissioning of LACBWR, with replacement energy being provided by either outside purchases or construction of a combustion turbine as alternatives to the issuance of a full term operating license. Table 8.1 provides the range of estimated costs associated with this replacement energy assuming that either all the

replacement energy is provided by outside purchases or that it is all obtained by a combination of replacement purchase and increased reliance on existing DPC capacity.

The Staff has not determined whether these resources are actually available, but given the relatively small quantity of energy involved, and the total resources available within DPC and from neighboring systems, it seems reasonable to assume this as a plausible scenario. This should not be understood to be a contradiction to the FES Conclusion in Section 8.3 as discussed in Section 8.2, that LACBWR will be needed to provide reliability for the DPC system. The postulated combination of replacement purchase and increased use of other DPC plants in Table 8.1-1 addresses only total energy available and does not consider margins necessary during peak demand.

13. Question

The Board requests further clarification as to whether or not a flat rate structure is in use by DPC. It is not clear whether the charge that appears in the rate every month is a fixed charge, and the relation of a fixed charge to an average charge. (Tr. 1135)

Response

Each of the member cooperatives comprising DPC is free to establish its own rates and consequently, there is no uniform rate structure that characterizes all the member coops. However, DPC has offered the following rate as representative of the typical distribution cooperative:

Monthly Service Rates for Typical Distribution Cooperative*
(Effective November 1979)

KWh USED

FACILITY CHARGE	Minimum Charge \$7.80/Month
ENERGY CHARGE	3.5¢/kWh plus Power Cost Adjustment**

The rate structure presented above is a flat rate structure and is so defined because the energy charge per kWh is constant or flat. Whether a customer consumes 1000 kWh per month or 1500 kWh per month, the energy charge per kWh remains the same. The rate also includes a facility charge (frequently referred to as a customer charge) which is very common in electricity rates and covers the fixed costs of servicing a customer. Regardless of how much electricity a customer consumes in a given month, he will always be charged this facility charge of \$7.80. Because the facility charge is a fixed amount, it will effectively reduce the unit cost per kWh as consumption increases. For example, assuming a customer consumes 1000 kWh per month and the rates are as defined above, the customer would be billed $1000 (\$.035) + \$7.80 = \$42.80$. A second consumer using 1500 kWh per month would be charged $1500 (\$.035) + \$7.80 = \$60.30$. Converting each bill to a per kWh cost results in 4.28¢ per kWh and 4.02¢ per kWh, respectively. Therefore, technically the

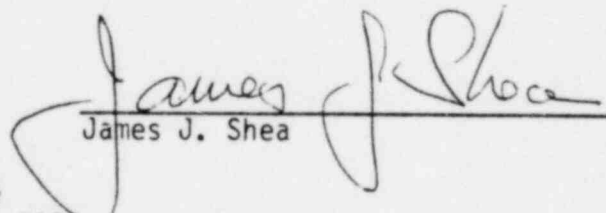
*Source: DPC submittal to R. Geckler, U.S. NRC, December 19, 1979, Table 8.3-1.

**Power Cost Adjustment is based on cost of fuel.

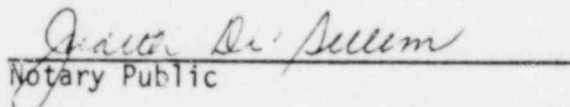
overall charge per kWh is not flat. However, by definition as long as the energy charge is constant, as it is in this case, the rate is identified as a flat rate. The distortion resulting from the facility charge does not negate the characterization of this rate as conforming to a flat rate structure.

AFFIDAVIT OF JAMES J. SHEA

I am the NRC project manager for the LaCrosse Boiling Water Reactor. The foregoing responses to Board questions were prepared by me or under my supervision. I have read the foregoing responses and believe them to be true and correct.


James J. Shea

Subscribed and sworn to before
me this 29th day of August 1980


Notary Public

My Commission Expires: 7-1-82

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NUCLEAR REGULATORY COMMISSION

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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF ANSWERS TO BOARD QUESTIONS ASKED AT PREHEARING CONFERENCE" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or as indicated by an asterisk through deposit in the Nuclear Regulatory Commission internal mail system, this 29th day of August, 1980:

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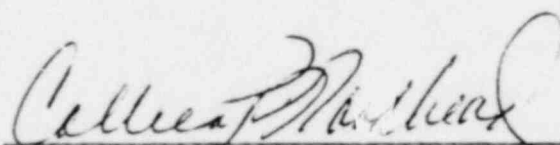
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