

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

NRC STAFF SECOND ROUND INTERROGATORIES

The NRC Staff hereby requests the Intervenor, Coulee Region Energy Coalition, pursuant to 10 CFR §2.740b to answer fully, in writing, and under oath or affirmation the following interrogatories. For each response to the interrogatories listed below, identify the person or persons who prepared, or substantially contributed to the preparation of the response. The questions posed are designated by double numbers to distinguish them from the first round discovery questions. Please number your response in the same manner for ease of reference.

Question 1-1(a)(1)

Your response to this question is incomplete since you did not provide the professional qualifications of the five persons listed as proposed expert witnesses nor those referenced in various documents submitted in your Supplemental Response to Staff Interrogatories. Please provide these professional qualifications.

Question 1-1(a)(2)

Does the Supplemental Response consist entirely of the opinion of Ms. Morse and Mr. Nygaard except where footnote references are indicated? (The response is unsigned but an affidavit signed by Ms. Morse and Mr. Nygaard attesting to the truth of the response is attached).

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Question 1-1(c)

To whom do you refer by the word "others" in your response to 1-C? To the extent you rely on knowledge by others in your response, please submit answers to this question.

CONTENTION 2A

Question 2-2(a)

You allege that the 1976 DES stated that LACBWR was in compliance with Appendix I. Please cite the specific page and section number of the DES where this statement is made.

Question 2-2(b)

- (i) Why does your entire response to interrogatory 2 consists of past events prior to the effectiveness of Appendix I for LACBWR?
- (ii) Do you admit that LACBWR complies with Appendix I at this time?
- (iii) If so, do you wish to withdraw Contention 2A?
- (iv) If not, do you have any evidence that LACBWR does not now comply with Appendix I?
- (v) Please answer the original question which asked for the specific quantity of the LACBWR off-gas emissions you believe do not comply with Appendix I and provide with particularity the basis for your response.

Question 3-3

- (a) You state that any radiation dose is harmful "in physical damage to the human body" and that no calculated doses are necessary to support Contention 2A.
  - (i) Define the phrase "physical damage" in your response and specifically state the basis for your statement.
  - (ii) By this statement do you mean to challenge the validity of Commission regulations set forth in 10 CFR Part 20 and Part 50, Appendix I?

- (iii) Does your response indicate that you have no information on doses from off-gas emissions?
  - (iv) If not, explain why you claim in your response that Appendix I and Part 20 limits are violated.
- (b) Cite the specific passages in references 7-25 which indicate that "any increases in exposure results in increase in damage to the human body".
- (c) You state that the Staff calculated doses listed in the FES assuming a flat terrain. What is your basis (evidence) for this statement?
- (d) With reference to the third paragraph of your response:
- (i) State with particularity the basis for your belief that the FES dose calculations based on one year of exposure are inaccurate (since the annual dose can be easily multiplied by the years of residence for any individual)
  - (ii) State with particularity the bases for your belief that the dose exceeds Appendix I (since Appendix I requires calculations for one year).
  - (iii) Please cite the specific doses you believe to be "hopelessly inaccurate," and your contradictory dose calculation and its basis.
- (e) (i) State with particularity the basis for your statement in the fourth paragraph that the LACBWR FES does not contain estimates of doses "to representative individuals in the surrounding area" especially "those in the worst receptor area of the plume, since the title of Table 5-5.3 clearly states the calculations are based on the "maximum individual."
- (ii) State what you understand the term "maximum individual" to mean.
- (iii) Explain the relevance of the Heidleberg Report and an abstract from the report (ref. 10 and 11) to support your contention.
- (f) State with particularity which doses in the FES that you allege exceed which limits in 10 CFR §50 Appendix I.
- (g) Give the location (downwind direction and distance from the reactor) of individuals "in the worst reactor area of the plume" that you allege

would receive doses which violate the "restrictions set forth in 10 CFR Part 20" and specifically state the facts upon which you base your answer.

- (h) (i) Explain your meaning in paragraph five where you state that "population dose commitments are calculated without extending to several half-lives or 100 years beyond the period of release".
  - (ii) Explain how this fact is relevant to your contention.
- (i) Please explain your meaning where you state that "there is no attempt made to consider either quantitatively or generically the world-wide impacts" and state with particularity the basis for the statement. What "quantity" do you mean?
- (j) How do you believe doses from LACBWR releases could be considered "generically"?
- (k) (i) Identify the "world-wide" impacts you believe result from LACBWR releases and specifically state the facts upon which you base your answer.
  - (ii) Explain your reference (26) to a telephone call.
  - (iii) Were you a party to this call?
  - (iv) Does this call refer to a letter from Barbara Taylor of EPA (July 3, 1980) which states that Mr. Malafeev informed EPA that world-wide impacts from LACBWR could not be calculated because the dose was too small?
- (l) State the basis for your belief that specific numerical calculations of world-wide impacts from LACBWR are possible and describe the physical and mathematical models used in these calculations.
- (m) Explain what you mean by "total environmental impact". Do you refer again to "world-wide" impacts?
- (n) You state that residents in the area surrounding LACBWR are receiving doses in excess of 25 mrem whole body. State the basis for this allegation specifically as to the dates and specific quantity of releases from LACBWR and other facilities; the location of the residents; and the doses you have calculated and the method of calculation used.
- (o) (i) Define the phrase "planned discharges of radioactive materials to the general environment from uranium fuel cycle operations and radiation from these operations" as used in paragraph 6.

- (ii) Explain with particularity the phrase "uranium fuel cycle operation."
  - (iii) In your response state with particularity to what "planned discharges" you refer; to what "uranium fuel cycle operation" you are referring, and to what "facilities" you are referring.
  - (iv) State specifically what evidence you possess to contradict the doses stated in the FES for the uranium fuel cycle beginning on p. 5-28.
- (p) State the nuclides and quantities of nuclides you allege are released annually from each of the identified fuel cycle operations and the bases for your response.
  - (q) State the nuclides and their quantity from each identified facility that you allege contribute most to the dose to those individuals that you allege receive doses in excess of 25 mrem whole body and the bases for your response.
  - (r)
    - (i) Define your phrase "worst case public exposures" used in paragraph 7.
    - (ii) Provide the calculations made by Dr. Sternglass and his method and data.

Question 4-4

- (a)
  - (i) Provide the basis for your statement that the numbers of individuals affected by LACBWR emissions is "impossible to estimate" because the area is both "a tourist and dairy area" and specifically indicate why being a tourist and dairy area results in a situation impossible to estimate.
  - (ii) What number of tourists do you allege receive exposures from LACBWR and how many hours and at what location are they exposed to LACBWR releases?
  - (iii) Provide the bases for your response.
- (b) If you believe it is impossible to estimate the number of individuals affected by LACBWR emissions, on what basis do you allege that "larger numbers of individuals are affected than those to which the NRC cares to admit"?
- (c) You state that Dr. Sternglass will further and more fully address "the issue".

- (i) State the data to be used by Dr. Sternglass to fully address the number of people affected by LACBWR emissions and the mathematical calculations he will use.
- (ii) Clarify the meaning of "the issue" regarding Contention 2A.

Question 5-5

- (a) If you believe that the area affected by LACBWR emissions "may be impossible to answer", on what basis do you state that dose calculations of the Staff are "unacceptably small"?
- (b)
  - (i) State with particularity the bases for your belief that the Heidelberg report contains evidence concerning the geographical area affected by LACBWR emissions.
  - (ii) Explain how Dr. Sternglass could "testify" on this report to answer the question of the geographical area affected by LACBWR.

CONTENTION 2B

Question 6-6

- (a) Your response does not answer the question as to what dose you allege workers at LACBWR receive from off-gas emissions. Please provide the dose you allege and the method of its calculation.
- (b) State with particularity the bases for your allegation that worker exposure calculations are insufficiently precise.
- (c) Since you state that you do not know what Commission exposure limits are, on what basis do you contend in Contention 2B that Part 20 limits are violated?
- (d)
  - (i) Explain the purpose for the many criticisms of 10 CFR Part 20 on pages 5&6 in your response.
  - (ii) Are you challenging the validity of the limits in 10 CFR Part 20 by Contention 2B?
- (e) You cite, in reference 32 a legal interpretation by Gertrude Dixon. Please provide Ms. Dixon's professional qualifications to make interpretations of the Commission's regulations or of the Atomic Energy Act, and explain the relevancy of this reference to Contention 2B.

- (f) State with particularity the bases for your statement on page 6 of your response that the FES contains only "estimations on doses to workers rather than real doses" since you reference NUREG-0594 in fn. 48 which is also cited on p. 5-12 of the FES.
- (g) (i) State with particularity the relevance of your response concerning dosimeter inaccuracies to a question about alleged worker doses from off-gas releases (since off-gas emissions are not monitored by worker dosimeters).  
  
(ii) What relevancy do you believe exists between dosimeters and off-gas dose calculations and monitors?
- (h) Please explain why you speak of "the issue of worker exposures"; ALARA principles; and "the contention that worker exposure levels are being adequately monitored" in your response number 6 since Contention 2B deals only with worker exposures from off-gas emissions and compliance with 10 CFR Part 20.

#### CONTENTION 8

##### Questions 7-7, 8-8, 9-9

- (a) In response to questions asking clarification of words and phrases used by Intervenor in Contention 8 you cite a document criticizing radiation monitoring activities by the States of California and Wisconsin, whereas your contention alleges certain deficiencies in the Applicant's monitoring program. Thus, your answer is not responsive to the questions asked. Please respond to the questions.
- (b) You allege that formalin used by Applicant in its monitoring program masks I-131 in milk. State all evidence you possess as to the specific manner formalin is used by Applicant, and all evidence that formalin, as used by Applicant, creates inaccurate I-131 readings.
- (c) Your references to a "change" in DPC's monitoring program and "until such time as the new program is in effect" is confusing.
  - (i) What "change" do you mean?
  - (ii) What "new program" do you mean?
  - (iii) What program do you believe "exists at present"?
- (d) List all evidence about the monitoring program at LACBWR your witness, Mr. Littlejohn, will use as basis of his testimony as requested in Question 1.

CONTENTION 9

Question 10-10

You state that your proposed witness, Dr. Sternglass asserts that adequate evidence exists to support your Contention 9 concerning coal-nuclear synergism. State all documentary evidence your witness intends to rely on concerning Contention 9 as requested in Question 1.

Question 11-11

You have submitted the Table of Contents from the 1975 IAEA symposium in Vienna (footnote 41).

- (i) Explain the purpose of this submittal which contains only one reference to coal-nuclear synergism which was pointed out in Dr. Gotchy's affidavit in support of Staff's Summary Disposition Motion (along with the IAEA symposium study itself).
- (ii) By this submission and your previous response 13, do you intend to admit that no scientific evidence exists to support your Contention 9?
- (iii) If so, do you wish to withdraw this contention?

Question 13-13

Your original response did not answer the question asked so that your recent response of "Same" is also unresponsive. Please answer the question.

Question 14-14

- (a) Is it correct to assume that the only evidence you could present at hearing are the three references (41, 42, 43) you cite in response to this question?
- (b) Please explain the relevancy of reference 43, since it contains no information on coal-nuclear synergism.



Question 15-15

Staff does not have a copy of the Clark Most article. At the prehearing conference, Staff was provided a copy of the article but later was asked to return it to Ms. Morse since she stated it was her only copy. Please provide a copy.

CONTENTION 19

Question 16-16

- (a) You state that retrofits required at LACBWR will be costly in "human and economic terms" and in the final paragraph you refer to "worker exposures". Clarify the meaning of the phrase "human terms".
- (b) Clarify the term "economic cost" and state with particularity how it relates to the items of cost listed in the Contention in a manner other than a financial one.
- (c) If you allege worker exposures will occur during retrofitting, state the total exposures you allege for all retrofits in terms of specific doses and the bases for your response.
- (d) Your response makes allegations about the financial expense of retrofits. Clarify whether the "cost" of retrofits means economic (monetary) costs or environmental costs and state with particularity the bases for your categorization.
- (e)
  - (i) What specific environmental costs, if any, do you allege in Contention 19?
  - (ii) If you allege specific environmental costs, state with particularity the bases for alleging such costs.
- (f) Explain why you allege that NUREG-0578 requirements 2.1.4(1) and 2.1.5 A are "costly" retrofits since they only require changes in written procedures, which have been completed (as has 2.1.3.b).
- (g)
  - (i) Explain why you believe 2.1.8. A (Improved post accident monitoring capability) to be a "costly" retrofit.
  - (ii) Do you believe worker exposure will be incurred?
  - (iii) If so, state the specific dose you allege, and the basis for your dose calculations.

- (h) (i) Do you allege that fire protection modifications, (most of which are outside containment) will create significant worker exposures?
- (ii) If so, state your basis for this allegation, as to the specific dose you allege for each modification.
- (i) (i) Do you allege that dewatering the LACBWR site would involve radiation exposure to workers?
- (ii) If your answer is yes, state with particularity the basis for your allegation.

Question 18-18

Explain why you believe there is "poor parts availability" for LACBWR.

Question 20-20

Your initial response to question 20 stated that "spent fuel storage costs would show up as benefits in the C/B ratio once any investments are made". Your present response states that you believed the \$800,000 to \$1,000,000 fuel pool modification should not have been undertaken and that the question is now moot. On the basis of these responses, is it your intent to withdraw that part of Contention 19 which states "the costs of spent fuel storage"?

Question 21-21

- (a) You state that the price of uranium will rise.
  - (i) Do you mean the monetary price?
  - (ii) If so, state the price you predict during the life of the plant and the basis for your prediction.
- (b) What amount of uranium use do you forecast in calculating uranium price?
- (c) Since the Ryan Report was published in 1978, is it your view that it reflects today's market conditions and if so, state with particularity the basis for your position.
- (d) By the words "the rising costs of fuel and maintenance" in Contention 19, do you mean the monetary costs?

- (e) (i) Does your information concerning comparisons between nuclear and solar energy involve the costs of an operating nuclear plant compared to costs of new solar construction?
- (ii) If not, are the cost comparisons between two new (unconstructed) sources?
- (f) State your evidence on which you base the claim that solar energy constructions require little maintenance.
- (g) (i) State with particularity the basis of your statement that LACBWR uses unique fuel and that the plant is unique.
- (ii) Do you believe that LACBWR is the only plant using stainless steel fuel?
- (iii) Explain why you believe the plant design to be unique.

Question 22-22

- (a) Your original (April 25, 1980) response to this question stated "decommissioning is a cost that is essentially non-productive and thus taxes consumers ..." and "future consumers will find reflected in their rates costs associated with a non-productive facility". Now you state that by decommissioning costs you mean both the economic and radiation exposures listed in your response.
  - (i) Please explain why you indicated only monetary (economic) costs in your prior response and have now asserted an additional, environmental meaning.
  - (ii) Give the specific doses to workers you allege for decommissioning at different times and how these doses affect the cost-benefit balance.
- (b) Explain your bases and cite evidence you possess for the "facts" listed a) through d) in response 22, especially in light of the contradictory statements made in the previous paragraph that you "had no particular method of decommissioning in mind with reference to Contention 19", and that you "believe there is a lack of relevant information and experience with which to predict costs of any method of decommissioning".
- (c) (i) Explain your intention by asserting the "facts" listed a)-d).
  - (ii) Explain what you are proposing in each "fact" and how the various "facts" affect the cost-benefit balance.

- (d) Clarify the meaning of the final paragraph of response 22 as to how this relates to Contention 19, since you state adverse factors for both near-term and long-term decommissioning.

CONTENTION 22

Question 23-23

- (a) You state that your Contention 22 alleges that not only energy conservation but also alternative sources of energy could eliminate the need for LACBWR. Cite the specific words in Contention 22 which refer to alternative energy sources.
- (b) You cite evidence of low electrical demand growth and alternative energy sources in response to question 23 which asks about your evidence to show that energy conservation could eliminate the need for LACBWR. Explain the relevance of your response, and answer the questions asked in interrogatory 23.
- (c) Your reference 55 is a report to the Wisconsin PSC. Please explain if this report's projections have been adopted as the official forecast by the PSC.
- (d) Please clarify your reference 56.
- (i) Does this indicate that a member of the Wisconsin Division of State Energy testified before the Wisconsin PSC that the agricultural sector will increase at 0.1% per annum through 1985?
- (ii) If so, please provide the page of that testimony which makes that statement.
- (e) Define the meaning of the word "conservation" in your Contention 22.
- (f) (i) Clarify how you believe the Wisconsin weatherization survey (ref. 61) supports your contention.
- (ii) Doesn't this survey indicate that consumers are unwilling to purchase weatherization items?
- (g) You state that time-of-use rates are offered by DPC to its customers, but "Few" are in use when installed.
- (i) To what do you refer by the word "Few"?
- (ii) Is this reference to a time-of-use meter?

- (h) Explain why you believe DPC has the "right" to ensure that member co-ops provide flat rate structures and how this is relevant to Contention 22, which refers only to DPC.
- (i) Explain why you present evidence of rate structures of Vernon Electric Cooperative when your contention only alleges that DPC should use a flat rate structure.
- (j) (i) State the DPC service charge to customers and explain why you believe this charge precludes flat rate structure, especially in light of your statement that "DPC has a flat rate structure for wholesale energy sales".
  - (ii) What do you mean by "wholesale"?
  - (iii) Do not all customers incur a service charge?

Question 25-25

Your answer is unresponsive. Mr. Freeman's testimony states he has no knowledge of DPC's time-of-use rates (p.3). Since your response to Question 23 shows that time-of-use rates have been ineffective, is it correct to conclude that your response to this question is "none" i.e., that you have no evidence to show that any amount of electrical demand could be eliminated by higher peak use rates?

Question 26-26

- (a) (i) Explain why you allege that DPC is promoting electric home heating.
  - (ii) Isn't the type of heating chosen by the builder or homeowner?
  - (iii) Please clarify your allegation and state your basis.
- (b) Explain paragraph 3 which states DPC would "promote intrusion into this marketplace".
  - (i) To what "marketplace" do you refer?
  - (ii) Clarify your meaning of "intrusion".
  - (iii) In what manner is DPC an "intruder"?

- (c) You state also in paragraph 3 that the DPC "intrusion" "represents a decision to promote conservation in traditional "peak" areas of consumption and to encourage consumption in "load manageable" areas of use. Please explain what specific allegation you are making and how it shows promotion of electrical use.
- (d) You cite (ref. 70) a 1970 newspaper article. Explain how you believe this shows electricity promotion at this time and provide the author of the statement.
- (e) Explain how DPC's statement concerning "off peaking" heating is "promotion" of electrical use, rather than merely load management -(which could reduce need for more power).
- (f) You quote p. 5 of the DPC General Manager's Report as stating

"DPC encourages installation of residential heating, systems which use electricity most of the time".

This quotation does not appear on p.5 of the Report you provided, nor on any other page. Since you have made a direct quotation of the General Manager, please provide the source of this statement.

- (g) You state that you have submitted two DPC advertisements promoting electricity, yet one ad submitted discusses power demand beyond the

"reductions gained from ambitious conservation measures  
-- such as home energy audit and load management programs  
-- as well as a possible emergence of wind and solar technologies as viable alternate energy sources"

and which also states

"Use electricity wisely - the energy you save may be your own".

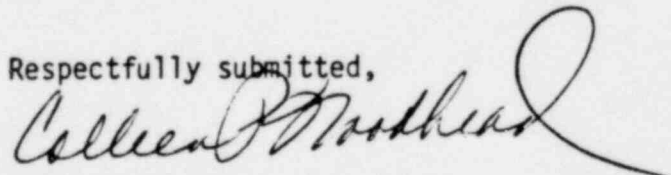
The second ad submitted is simply a list of members of DPC and a picture of a person beside an ice box which is captioned with a reference to the "good old days" before the "conveniences in your home that use electricity". Please explain as to how either of these advertisements could be understood to "promote" electrical use.

- (h) You allege that DPC encourages electricity use by criticism of those who promote conservation, yet you reference (74) an analysis of coal and nuclear development by Mr. Galazen and an ERA letter (75). Explain how the references support your Contention 22.

- (i) Your response cites publications and potential witnesses concerned with alternative energy sources. It is not clear how this information is relevant to your Contention 22 which alleges that energy conservation would eliminate the need for LACBWR, nor is it understandable as a response to the question asking about your allegation that DPC promotes use of electricity. Please explain the relevancy of your response.
- (j) You have submitted evidence in your response and references to show that
  - (A) DPC pursues energy conservation by:
    - load management (Response, p. 11)
    - home energy audits (Response, p. 11)
    - weatherization (Response, p. 12)
    - water heater insulators (Response, p. 12)
    - flat rate structure (Response, p. 12)
    - time-of-use rates (Response, p. 12)
  - (B) DPC encourages conservation measures by inserting relevant information in monthly bills to customers (Response, p. 12).
  - (C) That rural cooperatives are unable to adequately pursue energy conservation without Congressional funding (Ref. 66 and 67: Testimony before Congressional Subcommittees).
  - (D) That DPC advertises to influence customers to conserve energy.
  - (E) That DPC supports systems of off-peak heating (which could reduce need for power).

In light of this evidence which disproves your own contention, do you wish to withdraw Contention 22?

Respectfully submitted,



Colleen P. Woodhead  
Counsel for NRC Staff

Dated at Bethesda, Maryland  
this 12th day of August, 1980