

June 4, 1973

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In the Matter of Iowa Electric Light and Power Company, et. al.,
Duane Arnold Energy Center
Docket No. 50-331

Members of the Board:

The regulatory staff has reviewed the applicant's proposed findings of fact and conclusions of law and agrees, generally, with their substance. However, it is our view that the applicant's proposal is unduly lengthy for this uncontested proceeding. Accordingly, the regulatory staff submits, for adoption by the Board, the staff's enclosed proposed findings of fact and conclusions of law in the form of a proposed initial decision.

Should the Board prefer to make more detailed findings of fact and conclusions of law, the regulatory staff recommends adoption of the applicant's proposal as modified by the staff's enclosed proposed modifications.

Sincerely,

Robert Newton
Counsel for AEC Regulatory Staff

Enclosures:

1. Staff's Proposed Findings of Fact and Conclusions of Law

2. Staff's Proposed Modifications of Applicant's Proposal

cc: (see page 2)

OFFICE ▶

SURNAME ▶

DATE ▶

CCS

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UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
IOWA ELECTRIC LIGHT AND POWER COMPANY)
CENTRAL IOWA POWER COOPERATIVE, and) Docket No. 50-331
CORN BELT POWER COOPERATIVE)
)
(Duane Arnold Energy Center))

AEC REGULATORY STAFF'S
PROPOSED MODIFICATIONS OF APPLICANT'S
PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. In proposed finding "23", insert, after the period in line 6, the following:

"(10) Approximately 500 acres of farmland have been converted from the production of crops to power plant use. (pars. 17, 36)

(11) Approximately 1155 acres of land are required for the transmission lines, but only a very small fraction of this land will be pre-empted from productive use. (pars. 18, 36)"

2. Proposed finding "27" should be revised as follows:

line 11 -- substitute reference pages "3-16 to 3-24" for "p. 3-22."

line 14 -- add after the period, the following:

(Staff Exh. 1, p. 3-24). The staff expects that the discharge of blowdown water will normally cause temperature rises after complete mixing of only 0.1°F to 0.2°F.
(Staff Exh. 1, p. 5-13). Under historical

low flow conditions, the staff expects that temperature rises after complete mixing will not exceed 1.1°F. (Staff Exh. 1, pp. 5-13 to 5-14).

3. Proposed finding "33" should be revised on page 22 as following:

(a) Change the first sentence to read:

"In addition, it was noted by the regulatory staff that the inclusion of the somatic impact is a recent development, emphasized only as of November 1972 by the National Academy of Sciences, and that the inclusion of an explicit somatic dose is not customary or required. (Tr. 289)."

(b) Add the following addition reference at the end of line 11

"(Staff Exh. 1, p. 5-25)"

4. Proposed finding "36" should be revised to read as follows:

"36. As to land use, as noted earlier (pars. 17, 18), some 500 acres of farmland have been converted from the production of crops to power plant use. These 500 acres represent only a very small fraction of the productive farmland in Linn County and will not significantly alter land use in the vicinity of the plant (Staff Exh. 1, p. 4-1 and 5-1). Less than 50 acres will ultimately be occupied by DAEC buildings, structures and roads. (Staff Exh. 1, p. 5-1). The applicant intends to replant those portions of the riverbank disturbed during construction (App. Exh. 2(e)9 p.1); to plant lawns, shrubs and trees at appropriate places on the site and to restore the remaining area to a condition resembling the area surrounding the DAEC. (Testimony of Charles W. Sandford, p.5; [fol. Tr. 209]). In addition, the

steps taken to reduce the visual impact of transmission lines associated with the DAEC (Testimony of Charles W. Sandford, p.7-8, [fol. Tr. 209]) assure that the effects on land use, from an aesthetic standpoint and otherwise will be minimal. (Staff Exh. 1, pp.4-1 to 4-2). Of the approximately 1155 acres of land required for the transmission lines, only a few acres will be withdrawn from productive use. (Staff Exh. 1, p.4-1)."

5. Proposed finding "38" should be amended as follows"

Page 26, line 6

After the word "sunk," add "(Staff Exh. 1, p.9-1)"

Page 26, line 23

After the period, add "(Staff Exh. 1, p. 9-6)"

Page 27, line 4

After the period, add "(Staff Exh. 1, pp. 9-7, 9-8)"

6. Proposed finding "46" should be revised by deleting the first four sentences and substitute the following:

- (a) "The staff's cost-benefit analysis also reflects appropriately the monetary and environmental costs associated with construction and operation of DAEC; including the conversion of approximately 500 acres of farmland to power plant use with the possible irretrievable commitment of less than 40 acres of land occupied by buildings and other structures; the use of approximately 1155 acres of land for transmission lines but with only a small fraction of the acreage being removed from productive use; minor icing, fogging and noise effects associated with cooling tower operation; the short term effects of dredging in the river during construction and temporary disturbance of parts of the river shore; consumptive

river water use of 2.7 billion gallons per year (in relation to an average river flow which is about 260-fold greater); the withdrawal of a maximum of 1500 gpm of well water; and a very small (less than one acre) thermal plume within a 2°F isotherm. As to the heated discharge, after complete mixing of the blowdown effluent in the river, the river will be warmed less than 1.2°F at low flow conditions, and under average summer conditions, the river will be warmed less than 0.1°F. Chemical discharges, with the exception of chlorine, are not expected to be toxic to river biota but the applicant, as noted above (par. 24) has committed to staff-recommended limitations designed to prevent toxic levels from being reached."

- (b) On page 34, line 4, after the period, insert the following sentence: "Close control and monitoring of chemicals (including chlorine) and sanitary discharges will provide assurance that adverse affects on river biota and public health are minimized."
- (c) Revise the last sentence to read: "The Board, having independently considered the balance among conflicting factors finds: (a) that the staff's cost-benefit analysis appropriately reflects the costs and benefits associated with the DAEC; (b) that, on balance, the benefits from completion and operation of DAEC will exceed the environmental and economic costs; and (c) that the appropriate action, in light of the foregoing cost-benefit analysis, is continuation of construction permit CPPR 70 without further modification."

7. Proposed finding "47" should be revised to read as follows:

"47. In accordance with the requirements of the Commission's "Interim Policy Statement on Implementation of Section 511 of The Federal Water Pollution

Control Act Amendments of 1972 (FWPCA)" (38 F.R. 2679, January 29, 1973) ("IPS") the Board received evidence from applicant and regulatory staff to the effect that: (1) the DAEC will comply with all existing limitations or requirements promulgated or imposed pursuant to the FWPCA, i.e., (the applicable water quality standards of the State of Iowa) and (2) the staff's cost-benefit analysis was based on an evaluation of the environmental impacts expected to result from discharges or other activities associated with the DAEC at the level of limitations or requirements promulgated or imposed pursuant to the FWPCA.

8. In proposed finding "50", the sentence beginning on line 18 and ending on line 22 of page 37 should be revised to read as follows:

"Since the winter 300 cfs condition corresponds to the worst case low flow condition, the staff concluded, and we find, that operation of the DAEC at full power will meet the 5°F maximum temperature rise limitation of the Iowa water quality standards. (Testimony of Karl A. Meyer, p.3 [fol. Tr. 238]; Testimony of William J. Mecham, p.3 [fol. Tr. 274]; Staff Exh. 1, p.5-14)"

9. Proposed finding "62", should be amended on page 46, line 10, by inserting between the words "exceeded" and "unless", the following:

"by more than .002 acres,"

10. The proposed order should be amended by adding on line 7 of page 48, after "2.760", the following:

"2.762"

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
IOWA ELECTRIC LIGHT AND POWER COMPANY)
CENTRAL IOWA POWER COOPERATIVE, and) Docket No. 50-331
CORN BELT POWER COOPERATIVE)
)
(Duane Arnold Energy Center))

AEC REGULATORY STAFF'S PROPOSED FINDINGS OF FACT
AND CONCLUSIONS OF LAW, IN THE FORM OF A PROPOSED
INITIAL DECISION, WITH RESPECT TO
CONTINUATION OF APPLICANT'S CONSTRUCTION PERMIT

1. This proceeding involves Construction Permit CPPR-70 issued on June 22, 1970, to Iowa Electric Light and Power Company, Central Iowa Power Co-operative and Corn Belt Power Co-operative (applicants), on their application dated November 4, 1968, as amended, for the construction of a boiling water reactor designed to operate at 1658 megawatts (thermal), and to be known as the Duane Arnold Energy Center (the facility) at a site near Palo in Linn County, Iowa. (App. Exh. 2(a), pp. 1.1-1 to 1.1-2); Staff's Exh. 1, pp.1-1 to 1-2).
2. The facility is subject to the provisions of 10 CFR Part 50, Appendix D, Section B. Section B sets forth the procedures to be followed in completing the review of the environmental effects of facilities for which construction permits were issued in the period January 1, 1970

to September 9, 1971, but for which no operating license had been issued as of the later date. This proceeding was instituted, pursuant to 10 CFR Part 50, Appendix D, Section B, to consider whether the construction permit should be continued, modified, terminated, or appropriately conditioned to protect environmental values. (38 F.R. 6095). A hearing was held before the undersigned Atomic Safety and Licensing Board on May 3, 1973, in Cedar Rapids, Iowa.

3. The proceeding is not a contested proceeding, within the meaning of 10 CFR § 2.4(n) of the Commission's Rules of Practice, since there is no controversy between the staff and the applicants concerning continuation of the construction permit or concerning the terms or conditions thereof, and since no petition to intervene in opposition to the application has been granted or is pending.
4. Applicants submitted an Environmental Report for the Duane Arnold Energy Center to the Commission in April, 1971. In November, 1971, applicants submitted a revised Environmental Report and five amendments which added information and expanded upon the data in the initial report were also submitted. (Staff Exh. 1, p.1-2).

5. Based on the environmental information submitted by the applicant, its independent review and analysis thereof, and its own study, the staff issued a Draft Environmental Statement on November 22, 1972. (Staff Exh. 1, p.12-1) This Draft Environmental Statement was made available to other Federal Agencies, to agencies of the State of Iowa and to the public. (37 F.R. 20096). A Final Environmental Statement was issued March 9, 1973 (Staff Exh. 1). Comments received on the Draft Environmental Statement were considered in the preparation of the Final Environmental Statement and evaluation of those comments were included therein. (Staff Exh. 1, pp. 12-1 to 12-10).
6. The Final Environmental Statement covers the matters set forth in Section A of Appendix D to 10 CFR Part 50, with emphasis on a description of the plant site, including information on hydrology, meteorology, and human activities and biota in the environs (Staff Exh. 1, pp.2-1 to 2-48); information on the plant, its principal systems affecting plant effluents and associated transmission lines (Staff Exh. 1, pp.5-30 to 6-17); discussion of the environmental effects, both immediate and long-term, of site preparation and plant construction (Staff Exh. 1, pp.4-1 to 4-5); analysis of the need for power (Staff Exh. 1, pp. 8-1 to 8-4); consideration of the environmental effects, both immediate and long-term, of plant operation, including accidents, and

the commitment of resources (Staff Exh. 1, pp.5-1 to 5-36; pp.7-1 to 7-10); and discussion of costs and benefits of the plant, as proposed, as well as of alternate sites, plant types, and various plant subsystems, including the alternative of terminating construction and abandoning the plant (Staff Exh. 1, pp.8-4 to 11-4).

7. In preparation of the Final Environmental Statement, the staff made use of both its own experts and expert consultants to carry out a systematic interdisciplinary evaluation of the impact of the plant. (Tr. 254). It balanced, as well as considered, the benefits and costs of the facility and of available alternatives and alternative systems. (Staff's Exh. 1, pp.11-1 to 11-4)
8. The Final Environmental Statement is a comprehensive evaluation of the various environmental considerations specified in 10 CFR Part 50, Appendix D, and in § 102(2)(c) of NEPA and sets forth an adequate evaluation of various alternatives to the proposed course of action, as required by § 102(2)(D) of NEPA.
9. Continued construction and eventual operation of the Duane Arnold Energy Center is required for the applicants to meet electrical power demands and the Duane Arnold site represents an acceptable selection,

from those considered, based on overall economic and environmental considerations.

10. The staff, as part of its environmental review, considered in detail the effects of discharges from the plant on the Cedar River and concluded that there would be no adverse effect. (Staff Exh. 1, pp.3-4 to 3-10; 5-7 to 5-20; Testimony of William J. Mecham, p.7. [fol. Tr. 274]). The Board agrees with the staff's conclusion and further finds that the discharges into the Cedar River will not violate the applicable water quality standards of the State of Iowa. (Testimony of William J. Mecham, p.7, [fol. Tr. 274]; App. Exhs. 6 and 7).
11. The economic, environmental, and other benefits to be gained from the continued construction and operation of the facility outweigh the environmental costs which will result from the construction and the operation of the facility, including transmission lines.
12. The Board has given careful consideration to all the documentary and oral evidence produced by the parties on environmental matters. Based upon our review of the entire record in this proceeding and on the foregoing findings of fact and conclusions of law, the Board makes the following determinations on the ultimate issues:

- A. The environmental review conducted by the staff in this proceeding pursuant to the National Environmental Policy Act of 1969 has been adequate.
- B. The requirements of Section 102(2)(C) and (D) of the National Environmental Policy Act of 1969 and the requirements of Appendix D to 10 CFR Part 50 have been complied with in this proceeding.
- C. Upon independent consideration of the final balance among conflicting environmental factors contained in the record, after weighing the environmental, economic, technical and other benefits against environmental costs, and considering available alternatives, the Board believes that the appropriate action to be taken is the continuation of CPPR-70 for the Duane Arnold Energy Center, without modification.

WHEREFORE IT IS ORDERED THAT, the Director of Regulation is authorized, in accordance with this Initial Decision, to make findings and issue an order, consistent with this decision, continuing CPPR-70 in effect without modification. IT IS FURTHER ORDERED that, in accordance with 10 CFR 2.760, 2.762, 2.764, 2.785 and 2.786 of the Commission's Rules of Practice, that this initial decision

shall constitute the final decision of the Commission subject to the review thereof, pursuant of the above cited rules.

BY THE ATOMIC SAFETY AND LICENSING BOARD

Issued at Washington, D. C.
this _____ day of _____, 1973

* * * * *

Respectfully submitted,

Robert Newton

Robert Newton
Counsel for AEC Regulatory Staff

Dated at Bethesda, Maryland
this 4th day of June, 1973