FROM:
Lowenstein & Newman
Washington, D.C. 20036

DATE OF DOCUMENT: April 22, 1971
DATE RECEIVED: April 23, 1971
NO.: 1979

LTR. X MEMO: REPORT: OTHER:

TO:
Dr. Peter A. Morris

ORIG.: 1 CC: OTHER:

ACTION NECESSARY ☐ NO ACTION NECESSARY ☐
CONCURRENCE ☐ COMMENT ☐
DATE ANSWERED: BY:

CLASSIF: U POST OFFICE REG. NO:

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DESCRIPTION: (Must Be Unclassified)
Ltr submitted on behalf of Iowa Electric Light & Power Company trans the following:

ENCLOSURES: Ltr 4-12-71 fm Iowa Water Pollution Control Commission to Iowa Electric trans Iowa Water Pollution Control Commission State Certification Compliance with Iowa Water Quality Standards..... Ltr 4-14-71 fm State Dept of Health to Iowa Electric trans Permit No. 71-56-S... (1 Orig & 25 conf'd cys ea encl rec'd)

REMARKS:

REFERRED TO	DATE	RECEIVED BY	DATE
G. Blanc w/2 cys for ACTION	4-23-71		
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U.S. ATOMIC ENERGY COMMISSION
MAIL CONTROL FORM
FORM AEC-326S (6-60)

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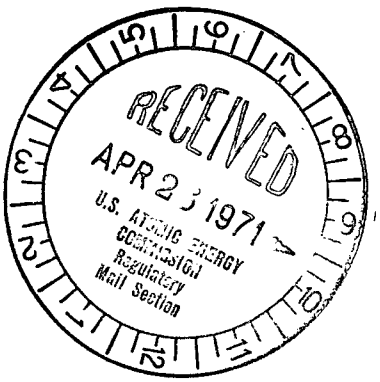
Regulator... To Cy.

LAW OFFICES
LOWENSTEIN AND NEWMAN
1100 CONNECTICUT AVENUE, N. W.
WASHINGTON, D.C. 20036

202 296-7585

ROBERT LOWENSTEIN
JACK R. NEWMAN
JEROME E. SHARFMAN

April 22, 1971



Dr. Peter A. Morris, Director
Division of Reactor Licensing
U.S. Atomic Energy Commission
Washington, D.C. 20545

Re: Duane Arnold Energy Center
AEC Docket No. 50-331

Dear Dr. Morris:

We are filing herewith the original and 25 copies of certificate issued by the Iowa Pollution Control Commission that there is reasonable assurance, as determined by the Iowa Commission, that activities under the AEC licenses applied for in the referenced docket will be conducted in a manner which will not violate applicable water quality standards.

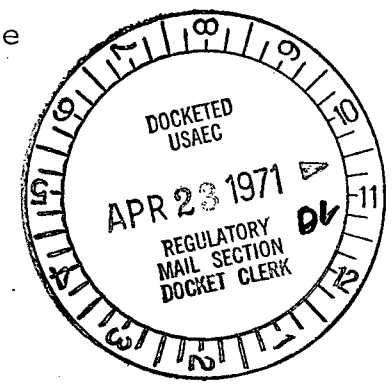
The certificate is filed pursuant to Section 21(b) of the Water Quality Improvement Act of 1970 (P.L. 91-224).

The certificate makes reference to a permit issued to the applicant under provisions of the Iowa Water Pollution Control Law by the Iowa State Department of Health. A copy of that permit is enclosed for your information.

Sincerely yours,

Lowenstein and Newman
Attorneys for Iowa Electric
Light and Power Company

Enclosure



1979

IOWA WATER POLLUTION CONTROL COMMISSION

STATE DEPARTMENT OF HEALTH
LUCAS STATE OFFICE BUILDING
DES MOINES, IOWA 50319

Received 4-22-71

12 April 1971

50-331
A-121

Iowa Electric Light & Power Company
Security Building
P. O. Box 351
Cedar Rapids, Iowa 52406

Attention: Duane Arnold, President

Gentlemen:

We have received the Permit Application to the Iowa Water Pollution Control Commission submitted by the Iowa Electric Light and Power Company for the Duane Arnold Energy Center dated March 16, 1971 and requests for a permit under provision of the Iowa Water Pollution Control Law and a state certification for this agency under provision of Section 21(b) of the Federal Water Pollution Control Act.

The attached State certification follows the form suggested by the Environmental Protection Agency. We feel there is reasonable assurance that the thermal radioactive and domestic sewage discharges will not violate applicable Iowa Water Quality Standards.

We are also enclosing Permit No. 71-56-S issued by the State Department of Health for the disposal of the thermal and liquid radioactive waste discharges in accordance with provisions of the Iowa Water Pollution Control Law. A permit for the sewage treatment plant now on the site was issued last year.

If you have any question please notify me.

Very truly yours,

R. J. Schliekelman,
Technical Secretary

RJS/ab

Enclosure
CC: Regional Health Service No. 1, S.D.H.

Original D. Arnold

SANDFORD	COOK	BECHTEL
WALLACE	COTTON	I.E. SITE
ROOT	KULLANDER	FILE
HUNT	WARD	
HEROLD	ZUHN	

Flanagan
Lowenstein
T. Lewis

RECEIVED
APR 20 1971
I. E. L. P. CO.
ENGR. DEPT.

IOWA WATER POLLUTION CONTROL COMMISSION
STATE CERTIFICATION
COMPLIANCE WITH IOWA WATER QUALITY STANDARDS
SECTION 21(b) OF THE
FEDERAL WATER POLLUTION CONTROL ACT

DUANE ARNOLD ENERGY CENTER
PALO, IOWA

This form of certification corresponds to the information requested in the alphabetical paragraphs listed in paragraph 615.2 of the Environmental Protection Agency notice of proposed rule making published in the Federal Register Vol. 36, No. 25-Friday February 5, 1971

(a) Iowa Electric Light and Power Company, Box 351, Cedar Rapids, Iowa.

(b) The Iowa Electric Light and Power Company is constructing at its Palo plant site a 550 megawatt electric nuclear power station having an initial power level of 1593 megawatts thermal. The plant will use a single-cycle, forced circulation, boiling water reactor producing steam for direct use in a conventional type steam turbine-generator.

During construction ground water will be pumped from the site to facilitate excavation and construction, and effluent from the sewage treatment system will be discharged to the Cedar River via a canal.

During operation of the power station, blowdown from the cooling towers, effluent from the sewage treatment system, and effluent from the liquid radioactive waste control system will be discharged via a canal into the Cedar River. Chlorine and $H_2 SO_4$ in the blowdown is added to control buildup of biological slime and scale in the cooling towers. Small quantities of chemicals will be used in the laboratory, and a list of such chemicals is included in Table 7 of the Application. There should be no significant quantities of micro-organisms in the cooling water

blowdown or sewage treatment effluent.

The main cooling water system of the facility utilizes induced draft cooling towers for heat dissipation, and therefore the thermal discharge during normal operation is limited to the blowdown water from these cooling towers.

Discharge of water into the Cedar River will be made in Section 10, Township 84 North, Range 8 West, Linn County, Iowa.

(c) Liquid radioactive wastes will be classified, collected, processed, stored and disposed of in a system including filters, waste demineralizers and storage tanks. Releases would normally be at effluent canal concentrations of 10^{-7} microcurie/cc or less.

A 15,000 gallon per day Chicago Pump Company, Model FL 118C, package sewage treatment plant has been installed and is in operation for construction personnel. Iowa Operating Permit No. 70-28-S has been issued by the Iowa State Department of Health. The facilities consist of the extended aeration modification of activated sludge treatment, followed by chlorination to insure an effluent of high quality.

(d) It is contemplated that the fuel will be loaded into the reactor in June, 1973, and it is expected that commercial operation will begin in December of 1973 and operate continuously thereafter.

(e) There is reasonable assurance from the information furnished by Applicant in its Application for a permit that the thermal load from the cooling tower blowdown, chemical used in the cooling water, other chemicals used in the operation of the plant or processed liquid radioactive wastes which will be discharged to the Cedar River will have no deleterious effect on the water quality or ecology of the Cedar River.

(f) Applicable Iowa Water Pollution Control Commission Regulations:

II.A.3

Sec. 2.3 - Specific Criteria for Designated Water Uses

(The minimum weekly flow which occurs once in ten years shall be used as the design parameter to determine the degree of treatment necessary to protect the specific water use. Flow will be based on a statistical analysis of existing flow data, if such data are available. This specific surface water criteria shall be met at all times when the flow exceeds the ten-year low flow. When the flow is less, the municipality or industry shall not be held responsible for lower stream quality when their waste effluent is receiving the necessary degree of treatment or control to comply with criteria at the seven day-ten year low flow.)

II.B

Sec. 1.2 - Surface Water Quality Criteria

1.2(1) - General policy considerations. Sampling to determine conformance to these criteria shall be done at sufficient distances downstream from waste discharge points to permit adequate mixing of waste effluents with the surface waters.

1.2(3) - Specific Criteria for designated water uses. The following criteria are applicable at flows greater than the lowest flow for seven consecutive days which can be expected to occur at a frequency of once every ten years.

a. Public water supply

(1) Bacteria: Numerical bacteriological limits of 2000 fecal coliforms per 100 ml for public water supply raw water sources will be applicable during the low flow periods when such bacteria can be demonstrated to be attributed to pollution by sewage.

Waters shall be considered to be of unsatisfactory bacteriological quality as a source when:

A sanitary survey indicates the presence or probability of the presence of sewage or other objectionable bacteria-bearing wastes, or

Numerical bacteriological limits of 2000 fecal coliforms per 100 ml for public water supply raw water sources are exceeded during the low flow periods when such bacteria can be demonstrated to be attributed to pollution by sewage.

(2) Radioactive substances: Gross beta activity (in the known absence of strontium 90 and alpha emitters) shall not exceed 1000 picocuries per liter.

The concentration of 226 radium and strontium 90 shall not exceed 3 and 10 picocuries per liter, respectively.

The annual average concentration of specific radionuclides, other than 226 radium and strontium 90, should not exceed 1/30 of the appropriate maximum permissible concentration for the 168 hour week, as set forth by the International Commission of Radiological Protection and the National Committee on Radiation Protection.

Because any human exposure to unnecessary ionizing radiation is undesirable, the concentrations of radioisotopes in natural waters should be maintained at the lowest practicable level.

(3) Chemical constituents: Not to exceed the following concentrations:

Specific Constituents (mg/l)

Arsenic	0.05	Cyanide	0.025
Barium	1.0	Fluoride	1.5
Cadmium	0.01	Lead	0.05
Chromium(hexa valent)	0.05	Phenols (from other than natural sources)	0.001

*A maximum of 5.0 mg/l for the entire heavy metal group shall not be exceeded.

All substances toxic or detrimental to humans or detrimental to treatment processes shall be limited to nontoxic or nondetrimental concentrations in the surface water.

b. Aquatic life

(1) Warm water areas-Interior streams-not to exceed a $90^{o}F$ maximum temperature nor a maximum $5^{o}F$ increase over background or natural temperature.

Heat should not be added to any water in such a manner that the rate of change exceeds $2^{o}F$ per hour.

(g) There is reasonable assurance that since no effect on the water quality or ecology of the Cedar River is expected by discharges from the facility, no possible effect can occur when said water enters the Mississippi River at the east boundary of the state of Iowa approximately 140 miles downstream.

(h) Based upon the information in Applicant's Application for a permit and upon Applicant's operating record, there is reasonable assurance that Applicant will conduct its activity in a manner that applicable water quality standards will not be violated. Thermal releases meet the temperature limits established by the Iowa Water Pollution Control Commission and approved by the Environmental Protection Agency and concentrations in the liquid radioactive wastes to be released will be below the limits established by the Iowa Water Pollution Control Commission and approved by the Environmental Protection Agency.

(i) This Certificate is issued based on information submitted in Applicant's Application, the Safety Evaluation by the Atomic Energy Commission, the Public Health Review by the U.S. Public Health Service, consultation with representatives of Applicant, a knowledge of the dilution available under critical low flow conditions of the Cedar River. The permit issued to the Applicant under provisions of the Iowa Water Pollution Control Law will include stipulations for submittal of records of operation concerning thermal, liquid radioactive and domestic waste discharges, a post operational monitoring program to determine biological effects of cooling tower blowdown on the Cedar River and the environmental radioactivity monitoring program during preoperational and post operational periods.

R. J. Schliekelman, Technical Secretary
Iowa Water Pollution Control Commission

Iowa
State Department of Health

LUCAS STATE OFFICE BUILDING
DES MOINES, IOWA 50319

ARNOLD M. REEVE, M.D., M.P.H.
COMMISSIONER OF PUBLIC HEALTH

Environmental Engineering Service
P. J. Houser, M.S., P.E., Chief

14 April 1971

Iowa Electric Light and Power Company
Security Building
P. O. Box 351
Cedar Rapids, Iowa 52406

Attention: Duane Arnold, President

Permit No. 71-56-S
Nuclear Power Generating Plant
Thermal and Radioactive Waste Discharges
Duane Arnold Energy Center
Palo, Iowa

Gentlemen:

In accordance with the provisions of Section 455B.25 of the Iowa Water Pollution Control Law, Code of Iowa, this permit is issued for the disposal of thermal and radioactive wastes for the project cited above for which Preliminary Safety Analysis Reports, a Safety Evaluation by the Atomic Energy Commission, A Public Health Review by the U.S. Public Health Service and an Application for Permit Report detailing monitoring programs and effluent discharges have been received in this office. This permit is issued subject to the following conditions and requirements:

1. Thermal releases be limited to those discharges specified in the Application and meet temperature limits established by the Iowa Water Pollution Control Commission.

2. Liquid radioactive waste concentrations released be limited to those specified in the Application and meet radioactive limits established by the Iowa Water Pollution Control Commission.

3. If found necessary, additional information or plans will be furnished to assist this Department to evaluate actual and potential losses to the stream.

4. Records of operation concerning the thermal, liquid radioactive and domestic waste discharges at the effluent and at other significant points will be furnished to this Department.

5. Preoperational and post operational radioactive monitoring program data as set out in the Application will be furnished on a periodic basis.

6. A post operational monitoring program will be established to determine biological effects of the cooling tower blowdown on the Cedar River.

The issuance of this permit in no way relieves the responsibility for complying with all local, state, and federal laws, ordinances, regulations, or other requirements applying to this project, including the safety rules of the Iowa Employment Safety Commission and State Bureau of Labor.

As this letter constitutes an official permit, it should be retained in your files.

At the direction of the Iowa Water Pollution Control Commission.

Very truly yours,

R. J. Schliekelman, Director
Water Pollution Division

RJS/ab
CC: Ted P. Lewis, Attorney
Regional Health Service No. 1, S.D.H.