

AEC DISTRIBUTION FOR PART 50 DOCKET MATERIAL
(TEMPORARY FORM)

CONTROL NO: 504

FILE: _____

FROM: Iowa Elec. Light & Power Co. Cedar Rapids, Iowa Charles W. Sandford		DATE OF DOC 1-13-75	DATE REC'D 1-16-75	LTR XX	TWX	RPT	OTHER
TO: Mr. E. Case		ORIG 3 signed	CC 37	OTHER	SENT AEC PDR SENT LOCAL PDR		XX XX
CLASS	UNCLASS XXXX	PROP INFO	INPUT XXX	NO CYS REC'D 40	DOCKET NO: 50-331		

DESCRIPTION: Ltr notarized 1-13-75 requesting for an amdt to OL-DPR-49 & trans the following:

ENCLOSURES: Proposed Changes to DAEC Opr. License & Tech Specs with attachments A & B.....

(40 cys encl rec'd)

PLANT NAME: Duane Arnold Plant.

FOR ACTION/INFORMATION DHL 1-17-75

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IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office

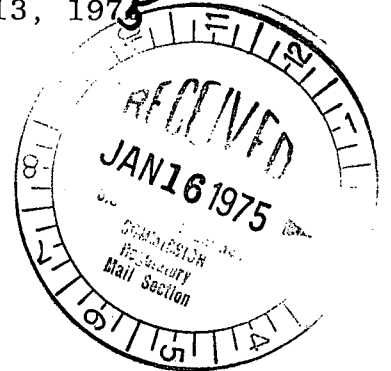
CEDAR RAPIDS, IOWA

CHARLES W. SANDFORD
EXECUTIVE VICE PRESIDENT

January 13, 1975

DL

50-331



Mr. E. G. Case
Acting Director of Licensing
U. S. Atomic Energy Commission
Washington, D.C. 20545

Dear Mr. Case:

Transmitted herewith, in accordance with the requirements of 10 CFR 50.59 and 50.90, is an application for amendment of DPR-49 to incorporate proposed changes in the license itself and the technical specifications (Appendix A to License) for the Duane Arnold Energy Center, described in the enclosures hereto. These changes are in response to a request from the AEC Directorate of Licensing.

The proposed changes have been reviewed and approved by the DAEC Operations Committee and the DAEC Safety Committee and do not involve a significant hazards consideration.

Three signed and notarized originals and thirty-seven additional copies of this application are transmitted herewith. This application, consisting of the foregoing letter and enclosures hereto, is true and accurate to the best of my knowledge and belief.

Iowa Electric Light and Power Company

By Charles W. Sandford
Charles W. Sandford
Executive Vice President

CWS:D

cc: w/enclosures

D. Arnold
G. Owsley
J. Keppler
J. Newman

Sworn and subscribed to before
me this 13th day of January, 1975.

Marjorie E. McDonald
Notary Public in and for the State
of Iowa.

Marjorie E. McDonald
NOTARY PUBLIC
State of Iowa
Commission Expires
September 30, 1976

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PROPOSED CHANGES TO DAEC OPERATING LICENSE AND
TECHNICAL SPECIFICATIONS

1-13-75

I. Proposed Changes in Operating License

- A. The licensees of DPR-49 propose the following changes in Operating License DPR-49:

Delete paragraphs 2.B. (2), 2.B.(3) and 2.B (4) of Operating License DPR-49 and substitute the following:

- "2.B. (2) IELP, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
- (3) IELP, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) IELP, Pursuant to the Act and 10 CFR Part 30 to receive, possess and use at any time 100 millicuries each of any byproduct material without restriction to chemical or physical form, for sample analysis or instrument calibration with the exception of sodium 24 of which the total is not to exceed two curies;
- (5) IELP, pursuant to the Act and 10 CFR Parts 40 and 70 to receive, possess and use at any time 100 milligrams each of any source of special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration;"

- B. The licensees of DPR-49 propose the following changes in the technical specifications for the DAEC (DPR-49, Appendix A):

Add new Specification 6.9.2, Source Leakage Test, as shown in Attachment A.

Add new items 8 and 9 as follows to Specification 6.10.1 concerning records which shall be retained for at least five years:

- "8. Records of sealed source leak test and results.
9. Records of annual physical inventory verifying accountability of sources on record."

Also included in this submittal as Attachment B are the FSAR changes required to implement the above changes.

II. Justification for Proposed Changes

- A. The licensees propose the above changes to the license in order to comply with an AEC request that Duane Arnold Energy Center change its license so that it corresponds to the general AEC "broad-form" operating license format. (Letter; Mr. G. Lear, Chief, Operating Reactors Branch #3 to Mr. D. Arnold, President, Iowa Electric Light and Power Company; dated December 16, 1974). The exception for Sodium ²⁴ allowing DAEC to possess up to 2 curies is required to perform a steam quality test on the moisture separators so that their performance can be determined. The Sodium ²⁴ will be injected into the coolant and carry-over will be measured in the moisture separators to determine steam quality.
- B. The licensees propose to add the above specifications concerning testing, reporting and records retention in order to maintain appropriate controls with respect to the radioactive sources subject to this proposed licensing action.

III. Review Procedures

These proposed changes have been reviewed by the DAEC Operations Committee and Safety Committee which have found that this proposed change does not involve a significant hazards consideration.

SPECIFICATION

SURVEILLANCE REQUIREMENT

6.9.2 Source Leakage Test

- A. Radioactive sources shall be leak tested for contamination. The leakage test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, it shall immediately be withdrawn from use, decontaminated, and repaired, or be disposed of in accordance with Commission regulations.

Those quantities of by-product material that exceed the quantities listed in 10 CFR 30.71 Schedule B are to be leak tested in accordance with the schedule shown in Surveillance Requirements. All other sources (including alpha emitters) containing greater than 0.1 microcurie are also to be leak tested in accordance with the Surveillance Requirements.

7.9.2 Source Leakage Test

- A. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an agreement State, as follows:
1. Each sealed source, except startup sources subject to core flux, containing radioactive material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months.
 2. The periodic leak test required does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another user unless they have been leak tested within six months prior to the date of use or transfer. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, sealed sources shall not be put into use until tested.
 3. Startup sources shall be leak tested prior to and following any repair or maintenance and before being subjected to core flux.

SPECIFICATION

B. Reporting Requirements

Results of the leak tests performed on sources shall be included in the Annual Operating Report if the tests reveal the presence of 0.005 microcurie or more of removable contamination.

6.9.2 BASES

Ingestion or inhalation of source material may give rise to total body or organ irradiation. This specification assures that leakage from radioactive material sources does not exceed allowable limits. In the unlikely event that those quantities of radioactive by-product materials of interest to this specification which are exempt from leakage testing are ingested or inhaled, they represent less than one maximum permissible body burden for total body irradiation. The limits for all other sources (including alpha emitters) are based upon 10 CFR 70.39(c) limits for plutonium.

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NAME: Keith D. Young

POSITION: Radiation Protection Engineer Assistant

EDUCATION: High School, 1964 (Scotland County)
Memphis, Missouri

U.S. Navy August 1964 - December 1972

Machinists Mate "A" School, 1965
Basic Nuclear Power School, 1966
Nuclear Power Training Unit, 1966
Engineering Laboratory Technician School, 1966
Basic Submarine School, 1967
Air Conditioning School, 1970

PROFESSIONAL EXPERIENCE:

Iowa Electric Light and Power Company
Duane Arnold Energy Center
January 1973 to November 1974

Mr. Young held the position of Radiation and Chemistry Technician. In this position Mr. Young was responsible for calibration of radiation measurement instruments, radiation exposure control, training of personnel in health physics and presenting of survey data for official reports.

US Navy

ALW, National Reactor Testing Station, Idaho, March 1970
to December 1972

Mr. Young was a Leading Engineering Laboratory

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Technician and supervised a four-man Laboratory Technician Crew. Mr. Young was also senior instructor in charge of training 40 men in basic radiological and chemistry control procedures. Mr. Young also gave detailed training to Engineering Laboratory Technician and Watch Officer trainees. During this time period, Mr. Young also assisted in two reactor plant refuelings and subsequent startup programs.

USS Sam Houston - March 1967 to March 1970

Mr. Young was an Engineering Laboratory Technician on an FBM nuclear submarine and accomplished laboratory duties related to health physics procedures and plant chemical analyses. Mr. Young assisted in a reactor plant refueling and subsequent startup testing program.

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13.10 RADIOACTIVE MATERIALS SAFETY

13.10.1 MATERIALS SAFETY PROGRAM

Sources, when not being used or supervised by the persons named in Section 13.10.3 will be kept in a locked area which will be posted according to 10CFR20. Tests for leakage and/or contamination shall be in accordance with section 6.9.2 of the Plant Technical Specifications.

13.10.2 FACILITIES AND EQUIPMENT

In addition to the information presented in Section 7.15 the following specific information is presented:

13.10.2.1 Counting Room Equipment

<u>Equipment</u>	<u>Principal use</u>
a. Nuclear - Chicago gas flow proportional counting with low background automatic planchet changer and teletype printout.	Low activity samples, alpha and/or beta

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<u>Equipment</u>	<u>Principle use</u>
b. Nuclear Measurement Corporation gas flow proportional counting system with manual changer and medium background shield	Chemical separations from the lab, High activity samples
c. Nuclear-Chicago manual changer liquid scintillation system with Mark II analyzer	Tritium samples
d. Nuclear Chicago manual well gamma scintillation system with Harshaw NAI well detector, phototubes and preamp	Quantitative Measurements, backup to GeLi system
e. Packard 4096 Channel Multichannel Analyzer with a Nuclear Diodes, GeLi solid state detector, a cassette magnetic tape recorder and interfaced to a Hewlett-Packard Model 9810 programmable calculator.	Quantitative and qualitative analyses of gamma emitting nuclides.

13.10.2.2 Health Physics Survey Instruments

<u>Instrument</u>	<u>Number Available</u>	<u>Type Detector</u>	<u>Manufacturer</u>	<u>Use</u>
RO-1	6	Air Ionization Chamber	Eberline	Dose rate, Beta Gamma
E-140	14	GM	Eberline	Survey Meter, Beta, Gamma
RM-15	13	GM	Eberline	Survey Meter Beta, Gamma

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<u>Instrument</u>	<u>Number Available</u>	<u>Type Detector</u>	<u>Manufacturer</u>	<u>Use</u>
Teletector	4	GM	Eberline	Dose rate, Beta, Gamma
PNR-4	2	BF ₃ Tube	Eberline	Dose rate, neutron
PAC-4S	2	Scintillation	Eberline	Survey meter, alpha
PIC-6A	8	Gas ionization Chamber	Eberline	Dose rate Beta, Gamma
HFM-3	3	GM	Eberline	Survey Meter, Beta, Gamma
Portal	1	GM	Eberline	Survey Meter, Beta, Gamma
NMC-GM	1	GM	Nuclear measurements	Smear, air samples counting Beta
HP Air Sampling Equipment				
CIM-CAM	3	--	Nuclear measurements	Iodine, particulate airborne activity
Low Volume Air 12 Sampler			Eberline	Iodine, particulate airborne activity
High Volume Air 3 Sampler			Staplex	Particulate airborne activity

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13.10.2.3 Hot Lab and Counting Room

Equipped with three fume hoods that exhaust to the main plant exhaust and are monitored as described in Amendment 1, Question 2.1.

Sink drains are collected and processed thru the Radwaste systems as described in Amendment 1, Question 10.6.

13.10.3 Personnel and Procedures

Experience and qualifications of the key personnel responsible for handling and monitoring radioactive materials are contained in Section G.8 for the Assistant Chief Engineer, Reactor and Plant Performance Engineer, Radiation Protection Engineer, and Radiation Protection Engineer Assistant.

Procedures for the handling and monitoring of radioactive materials are contained in the Plant Operations Manual. The provisions of these procedures are designed to conform to the standards of the Code of Federal Regulations, particularly those applicable in Title 10 and Title 49. These procedures are approved by the Operations Committee as required by the Plant Technical Specifications.

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13.10.4 Required Materials

Materials in accordance with the following schedule will be stored at the DAEC.

<u>Material</u>	<u>Form and Use</u>	<u>Possession Limit</u>
A. Any byproduct source and special nuclear material	As reactor fuel; as sealed neutron sources for reactor start up; as sealed sources for reactor instrument and radiation monitoring equipment calibration; and as fission detectors	As required for reactor operation
B. Any byproduct source or special nuclear material	Any form for sample analysis or instrument calibration	100 millicuries each isotope; any byproduct material 100 milligrams each isotope; any source or special nuclear material
C. Na ₂₄	Liquid or solid For use in steam carryover tests	Not to exceed 2 curies