August 18, 1987

Docket No. 50-331

Mr. Lee Liu
Chairman of the Board and
Chief Executive Officer
Iowa Electric Light and Power Company
Post Office Box 351
Cedar Rapids, Iowa 52406

Dear Mr. Liu:

SUBJECT: LICENSE AMENDMENT NO. 145 - STANDBY GAS TREATMENT SYSTEM TESTS (TAC 64077)

The Commission has issued the enclosed Amendment No. 145 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center (DAEC). This amendment consists of changes to the Technical Specifications in response to your application dated November 26, 1986.

The amendment revises the DAEC Technical Specifications to allow the Standby Gas Treatment System tests to be performed in the flowrate range of 3600-4000 cubic feet per minute.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register Notice.

Sincerely,

Original signed by

Anthony J. Cappucci, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
and Special Projects

Enclosures:
1. Amendment No. 145 to License No. DPR-49
2. Safety Evaluation

cc w/enclosures:
See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

IOWA ELECTRIC LIGHT AND POWER COMPANY
CENTRAL IOWA POWER COOPERATIVE
CORN BELT POWER COOPERATIVE

DOCKET NO. 50-331

DUANE ARNOLD ENERGY CENTER

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 145
License No. DPR-49

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Iowa Electric Light and Power Company, et al, dated November 26, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-49 is hereby amended to read as follows:

   Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 145 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of the date of issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Martin J. Virgilio, Acting Director
Project Directorate III-1
Division of Reactor Projects - III, IV, V
and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 18, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 145

FACILITY OPERATING LICENSE NO. DPR-49

DOCKET NO. 50-331

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Pages

3.7-15
3.7-16
3.7-44

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
(3.7)	(4.7)
B. Standby Gas Treatment System	B. Standby Gas Treatment System
1. Except as specified in 3.7.B.3 below, both trains of the standby gas treatment system and the diesel generators required for operation of such trains shall be OPERABLE at all times when secondary containment integrity is required.	1.a Annually it shall be demonstrated that pressure drop across the combined high efficiency and charcoal filters is less than 11 inches of water in the flow range of 3600 to 4000 cfm
	b. Annually demonstrate that the inlet heaters on each train are capable of an output of at least 11 Kw.
	c. Annually demonstrate that air distribution is uniform within 20% of averaged flow per unit across HEPA filters.
	d. Once per operating cycle automatic initiation of each branch of the standby gas treatment system shall be demonstrated.
	e. Manual operability of the bypass system for filter cooling shall be demonstrated annually.
	f. System drains shall be inspected quarterly for adequate water level in loop seals.
	g. Each bed will be visually inspected in conjunction with the sampling in Specification 3.7.B.2.b to assure that no flow blockage has occurred.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
2.a The results of the inplace cold DOP and halogenated hydrocarbon tests in the flow range of 3600-4000 cfm on HEPA filters and charcoal adsorber banks shall show $\geq$ 99.9% DOP removal and $\geq$ 99.9% halogenated hydrocarbon removal.	2.a The tests and sample analysis of Specification 3.7.B.2 shall be performed initially and then annually for standby service or after every 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.
b. The results of laboratory carbon sample analysis shall show < 1.0% penetration of radioactive methyl iodide at 70% R.H., 150°F, 40$\pm$ 4 FPM face velocity with an inlet concentration of 0.5 to 1.5 mg/m^3 inlet concentration methyl iodide.	b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.
c. Fans shall be shown to be capable of operation from 1800 cfm to the flow range of 3600-4000 cfm.	c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.
	d. Each circuit shall be operated with the heaters on at least 10 hours every month.
3. From and after the date that one train of the standby gas treatment system is made or found to be inoperable for any reason, continued reactor operation or fuel handling is permissible only during the succeeding seven days unless such train is sooner made OPERABLE, provided that during such seven days all active components of the other standby gas treatment train shall be OPERABLE.	3. When one train of the standby gas treatment system becomes inoperable, the OPERABLE train shall be demonstrated to be OPERABLE immediately and daily thereafter.
4. If Specifications 3.7.B.1, 3.7.B.2 and 3.7.B.3 are not met, the reactor shall be placed in the COLD SHUTDOWN condition and fuel handling operations shall be prohibited.	

the accidents analyzed, as the Updated FSAR Section 15.6.6 for the loss-of-coolant accident shows compliance with 10 CFR 100 guidelines with an assumed efficiency of 99% for the adsorber. Operation of the fans significantly different from the design flow envelope will change the removal efficiency of the HEPA filters and charcoal adsorbers.

A pressure drop test across the combined HEPA filters and charcoal adsorbers will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Heater capability, pressure drop and air distribution should be determined annually to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. Tests of the charcoal adsorbers with halogenated hydrocarbon refrigerant shall be performed in accordance with USAEC Report DP-1082. Iodine removal efficiency tests shall follow RDT Standard M-16-1T. (The design of the SGTS system allows the removal of charcoal samples from the bed directly through the use of a grain thief.) Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced with an adsorbent qualified according

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 145 TO FACILITY OPERATING LICENSE NO. DPR-49

IOWA ELECTRIC LIGHT AND POWER COMPANY
CENTRAL IOWA POWER COOPERATIVE
CORN BELT POWER COOPERATIVE

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

1.0 INTRODUCTION

By letter dated November 26, 1986, Iowa Electric Light and Power Company (the licensee) submitted an application to amend the Duane Arnold Energy Center (DAEC) Technical Specifications (TSs) appended to Facility Operating License No. DPR-49. The licensee proposes to perform the Standby Gas Treatment System (SGTS) tests in the air flow rate range of 3,600 cfm to 4,000 cfm. Currently, the TSs call for the tests to be conducted at the SGTS design flow rate of 4,000 cfm. The proposed air flow rate range is requested by the licensee due to difficulties in maintaining the required SGTS design flow rate during surveillance testing.

2.0 EVALUATION

The Duane Arnold SGTS consists of two identical parallel air filtration trains. Each train has a demister, an electric heater, a prefilter, an upstream HEPA, a charcoal absorber, and a downstream HEPA. Each train is designed to maintain a subatmospheric pressure of 0.25 inch of water in the secondary containment with an air flow rate of 4,000 cfm.

The requested changes allow the SGTS surveillance tests to be performed in the air flow rate range of 3,600 cfm (design flow minus 10%) to 4,000 cfm (design flow). The licensee stated in the referenced letter that the proposed change is requested due to difficulties in maintaining the SGTS design air flow rate of 4,000 cfm during the SGTS surveillance testing.

The General Electric (GE) Standard Technical Specifications (NUREG-0123, Revisions 3 and 4), as well as technical specifications for recently licensed BWRs, allow surveillance testing of the SGTS with the design air flow rate variance of plus or minus ten percent (± 10%). The licensee's request to perform the SGTS surveillance test within the air flow rate range of 3,600 cfm to 4,000 cfm conforms with the above specifications. The NRC staff finds that within this flow range, the design objectives of the SGTS filter trains still can be met (e.g., 0.25 inch water gauge subatmospheric pressure in the secondary containment, air flow residence times in the absorber). Therefore, the staff finds that the licensee's proposed changes are acceptable.

Specific changes to the Duane Arnold TSs are:

1) Surveillance Requirement 4.7.B.1.a is revised to allow the pressure drop test across the HEPA and charcoal filters to be performed in the flow range of 3,600 to 4,000 cfm.

2) Limiting Condition for Operation 3.7.B.2.a is revised to allow the inplace cold dioctylphthalate (DOP) and halogenated hydrocarbon test to be performed in the flow range of 3,600 to 4,000 cfm.

3) Limiting Condition for Operation 3.7.B.2.c is revised to demonstrate Standby Gas Treatment System fan operation from 1,800 cfm to the flow range of 3,600 to 4,000 cfm (rather than 1,800 cfm to 4,000 cfm).

4) 3.7.B/4.7.B Bases are revised to incorporate the above changes.

3.0 ENVIRONMENTAL CONSIDERATIONS

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. We have determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released off-site, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

4.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Lee

Dated: August 18, 1987

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 18, 1987

MEMORANDUM FOR: Sholly Coordinator

FROM: Anthony J. Cappucci, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects

SUBJECT: REQUEST FOR PUBLICATION IN BIWEEKLY FR NOTICE - NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Iowa Electric Light and Power Company, Docket No. 50-331, Duane Arnold Energy Center, Linn County, Iowa

Date of application for amendment: November 26, 1986

Brief description of amendment: The Duane Arnold Energy Center Technical Specifications are revised to allow the Standby Gas Treatment System tests to be performed in the flowrate range of 3600-4000 cubic feet per minute.

Date of issuance: August 18, 1987

Effective date: August 18, 1987

Amendment No.: 145

Facility Operating License No. DPR-49. Amendment revised the Technical Specifications.

Date of initial notice in Federal Register: February 26, 1987, 52 FR 5858

The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated

No significant hazards consideration comments received: No

Local Public Document Room location: Cedar Rapids Public Library, 500 First Street, S.E., Cedar Rapids, Iowa 52401

Anthony J. Cappucci, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
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existing procedures which are identified to potentially affect the safety design bases of equipment or safety objectives will not only have an additional level of review (a senior licensed operator and a supervisory plant staff member who possesses a senior operator's license), but also review by the Operations Committee. This will result in an equivalent or more stringent review process as compared to the existing process.

Based on an evaluation of the above licensee analysis, the staff has made a proposed determination that the proposed amendment involves no significant hazards consideration.

Local Public Document Room location: Cedar Rapids Public Library, 500 First Street, S.E., Cedar Rapids, Iowa 52401.

Attorney for licensee: Jack Newman, Esquire, Kathleen H. Shea, Esquire, Newman and Holtzinger, 1615 L Street, NW., Washington, DC 20036.

NRC Project Director: Daniel R. Muller.

Iowa Electric Light and Power Company, Docket No. 50-331, Duane Arnold Energy Center, Linn County, Iowa

Date of amendment request: November 26, 1986.

Description of amendment request: The proposed license amendment would revise Duane Arnold Energy Center (DAEC) Technical Specification Section 3.7/4.7, which requires Standby Gas Treatment System (SGTS) surveillance testing at a flowrate of 4,000 cfm. The proposed changes would allow those SGTS tests that are required to be performed at the design flowrate to be performed in the flowrate range of design flow minus 10% (3,600 cfm) to design flow (4,000 cfm).

Basis for proposed no significant hazards consideration determination: The Commission has provided standards (10 CFR 50.92(c)) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The licensee has provided an analysis of each of the above criteria for the amendment request as follows:

In reviewing this proposed request for Technical Specification change we have concluded that this amendment:

(1) does not involve a significant increase in the probability or consequences of an accident previously evaluated because the Standby Gas Treatment System will still perform its design functions and will be demonstrated to do so using this flowrate range. These tests will be performed using the same acceptance criteria for inplace cold [dioctylphthlate] DOP and halogenated hydrocarbon removal and maintaining a minimum 1/4 inch w.g. negative pressure in secondary containment currently in the DAEC Technical Specifications.

(2) does not create the possibility of a new or different kind of accident because it involves no modifications to the plant and affects only the testing of the Standby Gas Treatment System. The changes to the testing will not affect the performance or the design basis of the Standby Gas Treatment System as described in the updated FSAR.

(3) does not involve a significant reduction in a margin of safety because performing the revised Technical Specification Surveillance Requirements at an SGTS train flow near but below 4,000 cfm (e.g., between 3,600 and 4,000 cfm) is consistent with the design basis of the system. The SGTS flow control system will be tested to meet the same iodine retention requirement and maintain flow below 4,000 cfm and meet the 1/4 inch w.g. negative pressure requirement of Technical Specification Surveillance 4.7.C.1.c.

Therefore, this proposed license amendment is judged to involve no significant hazards consideration.

Based on an evaluation of the above licensee analysis, the staff has made a proposed determination that the proposed amendment involves no significant hazards consideration.

Local Public Document Room location: Cedar Rapids Public Library, 500 First Street, S. E., Cedar Rapids, Iowa 52401.

Attorney for licensee: Jack Newman, Esquire, Kathleen H. Shea, Esquire, Newman and Holtzinger, 1615 L Street, N W, Washington, DC 20036.

NRC Project Director: Daniel R. Muller.

Louisiana Power and Light Company, Docket No. 50-382, Waterford Steam Electric Station, Unit 3, St. Charles Parish, Louisiana.

Date of amendment request: January 13, 1987.

Description of amendment request: Louisiana Power and Light Company (LP&L) has proposed the addition of new technical specification (No. 3.3.3.7.3) for the Broad Range Toxic Gas Detection System (BRTGDS) to satisfy Condition 2.C.4, "Broad Range Toxic Gas Detectors," of Facility Operating License No. NPF-38 and Supplement No. 6 to the Safety Evaluation Report (NUREG-0787).

Waterford 3 was allowed to operate during the first cycle without a BRTGDs system due to near-term compensatory measures i.e., periodic surveys of toxic gas inventories, a hot line communication with the St. Charles Parish Emergency Operations Center, a control room operator and plant personnel training program, and procedures with respect to response to toxic gases. Although these measures were considered adequate for short-term operation, an additional level of protection will be provided by the BRTGDS for operation over the expected plant lifetime.

The proposed BRTGDS would include two redundant photoionization detectors. These detectors would monitor the atmosphere in the reactor auxiliary building outside air intake duct. Whenever the concentration of the detectable gases exceeds a preset limit, these detectors will each induce an electric current in the associated circuit through photoionization, thus generating a signal. This signal automatically switches the control room air conditioning system to the isolation mode of operation.

The Waterford Steam Electric Station, Unit 3 control room operators are presently protected from accidental releases of chlorine and ammonia by separate chlorine and ammonia detectors which monitor the atmosphere in the outside air intake duct. The detectors sound an alarm and isolate the control room if the concentration of either of these gases exceeds its respective preset limit.

In addition, LP&L is a participant in the St. Charles Parish emergency hot line, which can be expected to alert the control room within five minutes of being notified of any serious release of hazardous chemicals in the area, thus allowing the operators to take immediate protective action. The BRTGDS will thus supplement the present defense-in-depth toxic chemical protective measures and provide additional toxic chemical protection.

This new technical specification will require two independent broad range gas detection systems to be operable with their alarm/trip setpoints adjusted to actuate at the lowest achievable IDLH (Immediately Dangerous to Life and Health) gas concentration level of detectable toxic gases. They are also required to provide reliable operation. This proposed technical specification is to be applicable in all modes of operation. Should the above requirements not be met, one of the following actions will be required. When only one broad range gas detection system is operable, the inoperable system must be restored to operable status within seven days, or within the next six hours the plant must initiate and maintain operation of the control