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. 153
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 August 31, 1987, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 153, 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

John N. Hannon, Director
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 30, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 153

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.

REMOVE	INSERT
3.7-15	3.7-15
3.7-16	3.7-16
3.7-43	3.7-43
3.7-45a	--
3.7-46	3.7-46
3.7-47	3.7-47
3.8-4	3.8-4
--	3.9-4a
3.10-1	3.10-1
3.10-2	3.10-2
3.10-4	3.10-4

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 Specifications 3.7.B.3 and 3.9.D, both trains of the standby gas treatment system 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 automati. 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 > 99.9% DOP removal and ≥ 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 ± 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, 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 are 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 within the next 24 hours and fuel handling operations shall be prohibited.	

needed to cleanup the reactor building atmosphere upon containment isolation. If one system is made or found to be inoperable during reactor operation or core alterations, there is no immediate threat to the containment system performance. Thus, reactor or refueling operation(s) may continue while repairs are being made, provided the requirements of Specifications 3.7.B.3 and 3.9.D, respectively, are met. If neither circuit is operable, the plant is brought to a condition where the standby gas treatment system is not required.

High efficiency particulate absolute (HEPA) filters are installed before and after the charcoal adsorbers to minimize potential release of particulates to the environment and to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential release of radioiodine to the environment. The in-place test results should indicate a system leak tightness of less than 1 percent bypass leakage for the charcoal adsorbers and a HEPA efficiency of at least 99.8 percent removal of DOP particulates. The laboratory carbon sample test results should indicate a radioactive methyl iodide removal efficiency of at least 99.9 percent for expected accident conditions. If the efficiencies of the HEPA filters and charcoal adsorbers are as specified, the resulting doses will be less than the 10 CFR 100 guidelines for

Demonstration of the automatic initiation capability and operability of filter cooling is necessary to assure system performance capability. If one standby gas treatment system is inoperable, the other system (excluding the supporting diesel generator) must be tested daily. This substantiates the availability of the operable system and thus reactor or refueling operation can continue for a limited period of time.

Initiating reactor building isolation and operation of the standby gas treatment system to maintain at least a 1/4 inch of water vacuum within the secondary containment provides an adequate test of the operation of the reactor building isolation valves, leaktightness of the reactor building and performance of the standby gas treatment system. Functionally testing the initiating sensors and associated trip channels demonstrates the capability for automatic actuation. Performing these tests prior to refueling will demonstrate secondary containment capability prior to the time the primary containment is opened for refueling. Periodic testing gives sufficient confidence of reactor building integrity and standby gas treatment system performance capability.

8. Primary Containment Power Operated Isolation Valves

Automatic isolation valves are provided on process piping which penetrates the containment and communicates with the containment

atmosphere. The maximum closure times for these valves are selected in consideration of the design intent to contain released fission products following pipe breaks inside containment. Several of the automatic isolation valves serve a dual role as both reactor coolant pressure boundary isolation valves and containment isolation valves. The function of such valves on reactor coolant pressure boundary process piping which penetrates containment (except for those lines which are required to operate to mitigate the consequences of a loss-of-coolant accident) is to provide closure at a rate which will prevent core uncovery following pipe breaks outside primary containment.

In order to assure that the doses that may result from a steam line break are within 10 CFR 100 guidelines, it is necessary that no fuel rod perforation results from the accident occur prior to closure of the main steam line isolation valves. Analyses indicate the fuel rod cladding perforations would be avoided for main steam valve closure times, including instrument delay, as long as 10.5 seconds. The test closure time limit of 5 seconds for these main steam isolation valves provides sufficient margin to assure that cladding perforations are avoided. Redundant valves in each line insure that isolation will meet the single failure criteria.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
b. From and after the date that one of the two 125 volt station battery systems is made or found to be inoperable for any reason, reactor operation may continue for three days provided Specification 3.5.G is met, and repair is immediately initiated.	
c. From and after the date that the 250 volt station battery system is made or found to be inoperable for any reason, the HPCI system shall be considered to be inoperable and the requirements of Specification 3.5.D shall be met.	
3. Offsite Power	3. Offsite Power
a. From and after the date that the startup or standby transformer and one diesel-generator or associated buses are made or found to be inoperable for any reason, reactor operation may continue provided the requirements of Specification 3.5.G.1 are satisfied.	a. When it is determined that one of the diesel-generators or associated buses is inoperable, the requirements of Specification 4.5.G.1 shall be satisfied.
b. From and after the date that both the startup and standby transformers become inoperable, reactor operation may continue for seven days provided both emergency diesel-generators, associated buses and all low pressure cooling systems are operable.	b. When it is determined that both the startup and standby transformers are inoperable both diesel-generators, associated buses and all low pressure core and containment cooling systems shall be demonstrated to be operable immediately and daily thereafter.
4. Auxiliary Electrical Equipment - CORE ALTERATIONS	
a. Refer to Specification 3.9.D.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
D. AUXILIARY ELECTRICAL EQUIPMENT - CORE ALTERATIONS 1. CORE ALTERATIONS shall not be performed unless all of the following conditions are satisfied: a. At least one off-site power source and either the startup or standby transformers are OPERABLE and capable of supplying power to the 4kV emergency buses, and b. One diesel-generator is OPERABLE with: 1) its associated standby gas treatment system train OPERABLE, and 2) its associated main control room ventilation standby filter unit subsystem OPERABLE.	

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.10 ADDITIONAL SAFETY RELATED PLANT CAPABILITIES	4.10 ADDITIONAL SAFETY RELATED PLANT CAPABILITIES
Applicability:	Applicability:
Applies to the operating status of the main control room ventilation standby filter unit system and the emergency shutdown local control panel.	Applies to the surveillance requirements for the main control room ventilation standby filter unit system, and the emergency shutdown control panels which are required by the corresponding Limiting Conditions for Operation.
Objective:	Objective:
To assure the availability of the main control room ventilation standby filter unit system, and emergency shutdown control panels under the conditions for which the capability is an essential response to station abnormalities.	To verify that operability or availability under conditions for which these capabilities are an essential response to station abnormalities.
A. MAIN CONTROL ROOM VENTILATION	A. MAIN CONTROL ROOM VENTILATION
1. Except as specified in Specifications 3.9.D and 3.10.A.3, the main control room ventilation standby filter unit system shall be OPERABLE at all times when SECONDARY CONTAINMENT INTEGRITY is required.	1. Annually, the pressure drop across the combined HEPA filters and charcoal adsorber banks shall be demonstrated to be less than 6 inches of water at system design flow rate.
2.a The results of the in-place cold DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show $\geq$ 99% DOP removal and $\geq$ 99% halogenated hydrocarbon removal.	2.a The tests and sample analysis of Specification 3.10.A.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.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
b. The results of laboratory carbon sample analysis shall show $\geq$ 90% radioactive methyl iodide removal at a face velocity of 40 fpm, 0.05 to 0.15 mg/m^3 inlet iodide concentration, $\geq$ 95% R.H. and $\geq$ 125°F.	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. System flow shall be 1000 cfm $\pm$ 100 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 at least 10 hours every month.
3. From and after the date that one of the main control room ventilation standby filter unit subsystems are inoperable, reactor operation or refueling operations is permissible only during the succeeding seven days unless such circuit is sooner made OPERABLE.	3. Annually, automatic initiation of the control room air treatment system shall be demonstrated.
4. If these conditions cannot be met, reactor shutdown shall be initiated and the reactor shall be in COLD SHUTDOWN within 24 hours for reactor operations and refueling operations shall be terminated immediately.	
B. EMERGENCY SHUTDOWN CONTROL PANEL	B. EMERGENCY SHUTDOWN LOCAL CONTROL PANEL
1. At all times when not in use or being maintained the emergency shutdown local control panel shall be secured.	1. The emergency shutdown local control panel shall be visually checked once per week to verify it is secured.
	2. Operability of the switches on the emergency shutdown local control panel shall be functionally tested once per operating cycle.

filters and charcoal adsorbers are as specified, the resulting doses will be less than the allowable levels stated in Criterion 19 of the General Design Criteria for Nuclear Power Plants, Appendix A to 10 CFR Part 50. Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers.

If one of the systems is found to be inoperable, the second unit provides protection and reactor operation or refueling operation(s) may be performed for a limited period of time while repairs are being made. If the system cannot be repaired within seven days, the reactor is shutdown and brought to cold shutdown within 24 hours or refueling operations are terminated.

E. EMERGENCY SHUTDOWN LOCAL CONTROL PANEL

The Emergency Shutdown Local Control Panel is provided to assure the capability of controlling reactor pressure for taking the plant to the hot shutdown condition external to the control room for the unlikely condition that the control room becomes uninhabitable.