



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

IES UTILITIES INC.

CENTRAL IOWA POWER COOPERATIVE

CORN BELT POWER COOPERATIVE

DOCKET NO. 50-331

DUANE ARNOLD ENERGY CENTER

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 209
License No. DPR-49

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. **The application** for amendment by IES Utilities Inc., et al., dated November 10, 1994, and supplemented March 1, 1995, 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. 209, 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 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

for Jon B. Hopkins

Gail H. Marcus, Director
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of issuance: April 25, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 209

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 vertical lines.

Remove

iii
3.2-4
3.2-7
3.2-46

Insert

iii
3.2-4
3.2-7
3.2-46

	<u>LIMITING CONDITIONS FOR OPERATIONS</u>	<u>SURVEILLANCE REQUIREMENTS</u>	<u>PAGE NO.</u>
3.7	Plant Containment Systems	4.7	3.7-1
	A. Primary Containment Integrity	A	3.7-1
	B. Primary Containment Power Operated Isolation Valves	B	3.7-7
	C. Drywell Average Air Temperature	C	3.7-9
	D. Pressure Suppression Chamber - Reactor Building Vacuum Breakers	D	3.7-10
	E. Drywell - Pressure Suppression Chamber Vacuum Breakers	E	3.7-11
	F. Main Steam Isolation Valve Leakage Control System (MSIV-LCS)	F	3.7-12
	G. Suppression Pool Level and Temperature	G	3.7-13
	H. Containment Atmospheric Dilution	H	3.7-15
	I. Oxygen Concentration	I	3.7-16
	J. Secondary Containment	J	3.7-17
	K. Secondary Containment Automatic Isolation Dampers	K	3.7-18
	L. Standby Gas Treatment System	L	3.7-19
	M. Mechanical Vacuum Pump	M	3.7-21
3.8	Auxiliary Electrical Systems	4.8	3.8-1
	A. AC Power Systems	A	3.8-1
	B. DC Power Systems	B	3.8-3
	C. Onsite Power Distribution Systems	C	3.8-5
	D. Auxiliary Electrical Equipment - CORE ALTERATIONS	D	3.8-5
	E. Emergency Service Water System	E	3.8-6
3.9	Core Alterations	4.9	3.9-1
	A. Refueling Interlocks	A	3.9-1
	B. Core Monitoring	B	3.9-5
	C. Spent Fuel Pool Water Level	C	3.9-6
	D. Auxiliary Electrical Equipment - CORE ALTERATIONS	D	3.9-6
3.10	Additional Safety Related Plant Capabilities	4.10	3.10-1
	A. Main Control Room Ventilation	A	3.10-1
	B. Remote Shutdown Panels	B	3.10-2a
	C. Control Building Chillers	C	3.10-2a
3.11	River Level Specification	4.11	3.11-1

Table 3.2-A (Continued)
ISOLATION ACTUATION INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>TRIP LEVEL SETTING</u>	<u>APPLICABLE OPERATING MODE</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM^(a)</u>	<u>VALVE GROUPS ISOLATED BY SIGNAL</u>	<u>ACTION</u>
<u>Secondary Containment</u>					
Refuel Floor Exhaust Duct - High Radiation	≤ 9 mr/hr	1,2,3 and *	1	3 ^(c)	26
Reactor Building Exhaust Shaft - High Radiation	≤ 11 mr/hr	1,2,3 and *	1	3 ^(c)	26
Offgas Vent Stack - High Radiation	Note k	Note m	1	3 ^(c)	27
<u>RHR System Shutdown Cooling</u>					
Reactor Vessel Pressure - High	≤ 135 psig	1,2,3	1	4	23
<u>Reactor Water Cleanup</u>					
RWCU Differential Flow - High	≤ 40 gpm/d	1,2,3	1	5	23
RWCU Area Temperature - High	≤ 130°F	1,2,3	1	5	23
RWCU Area Ventilation Differential Temperature - High	Δ14°F ^(d)	1,2,3	1	5	23
Standby Liquid Control System Initiation	NA	Note i	1	5 ^(e)	23
RWCU Area Near Tip Room Ambient Temperature - High	≤ 111.5°F	1,2,3	1	5	23

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Table 3.2-A (Continued)
ISOLATION ACTUATION INSTRUMENTATION
ACTION

ACTION 20 -	Be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
ACTION 21 -	Be in at least STARTUP with the associated isolation valves closed within 6 hours or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
ACTION 22 -	Be in at least STARTUP within 6 hours.
ACTION 23 -	Close the affected system isolation valves within one hour and declare the affected system inoperable.
ACTION 24 -	Not used.
ACTION 25 -	Restore the manual initiation function to OPERABLE status within 8 hours or close the affected system isolation valves within the next hour and declare the affected system inoperable.
ACTION 26 -	Isolate Secondary Containment with the Standby Gas Treatment System operating within one hour.
ACTION 27 -	Within one hour, close the primary containment vent and purge valves, or establish administrative control of those valves with continuous monitoring of alternate instrumentation.

NOTES

- * When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.
- ** When any turbine stop valve is greater than 90% open and/or when the key-locked bypass switch is in the NORM position.
- (a) When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required Actions may be delayed as follows: (1) for up to 6 hours for RWCU Differential Flow-High, RCIC Manual Initiation, HPCI Manual Initiation; and (2) for up to 6 hours for the remaining Trip Functions provided the associated Trip Function maintains isolation capability.
- (b) Operates Group 1 valves except Main Steam Isolation Valves. Also trips Mechanical Vacuum Pump which results in a subsequent isolation of the Mechanical Vacuum Pump Suction valves.
- (c) Also starts the Standby Gas Treatment System.
- (d) Actual setpoint shall be 14°F above the 100% operation ambient temperature conditions as determined by DAEC plant test procedure.
- (e) Closes MO-2701 and MO-2740 only.
- (f) Requires system steam supply pressure-low coincident with drywell pressure-high to close HPCI/RCIC exhaust vacuum breaker valves.
- (g) Manual isolation closes MO-2401 only, if RCIC initiation signal present.
- (h) Manual isolation closes MO-2239 only, if HPCI initiation signal present.
- (i) When the Standby Liquid Control System is required to be OPERABLE per Specification 3.4.A.
- (j) Within 24 hours prior to the planned start of the hydrogen injection test with the reactor power at greater than 20% rated power, the normal full-power radiation background level and associated trip setpoints may be changed based on a calculated value of the radiation level expected during the test. The background radiation level and associated trip setpoints may be adjusted during the test program based on either calculations or measurements of actual radiation levels resulting from hydrogen injection. The background radiation level shall be determined and associated trip setpoints shall be set within 24 hours of reestablishing normal radiation levels after completion of the hydrogen injection test or within 12 hours of establishing reactor power levels below 20% rated power, while these functions are required to be operable.
- (k) The monitors shall be set to initiate isolation at a setting equivalent to or below the dose rate limits in ODA section 6.2.2.1.
- (m) During VENTING or PURGING of primary containment at any time when PRIMARY CONTAINMENT INTEGRITY is required.

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Both of the scram discharge volume high level channels provide input to the "B" logic.

The refueling interlocks operate one logic channel, and are required for safety only when the mode switch is in the refueling position.

For effective emergency core cooling for small pipe breaks, the HPCI system must function since reactor pressure does not decrease rapidly enough to allow either core spray or LPCI to operate in time. The Automatic Depressurization System (ADS) is provided as a backup to HPCI. The arrangement of the ADS logic is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the specification are adequate to assure the above criteria are met. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

Two air ejector offgas post-treatment monitors are provided. They are designed so that an instrument failure gives a downscale trip or an inoperative trip. When both instruments reach an upscale trip point, or when one reaches an upscale trip point and the other reaches a downscale trip point or an inoperative trip, a trip is actuated. The post-treatment monitors have three upscale trip setpoints, one (Hi) to initiate charcoal bed bypass valve closure (CV-4134A open and CV-4134B closing to route offgas through the charcoal) and another (Hi-Hi-Hi) to initiate offgas system isolation valve (CV-4108) closure. The third trip point (Hi-Hi) is for alarm initiation, and will initiate prior to the offgas isolation trip.

Two sets of two radiation monitors are provided which initiate the Reactor Building Isolation function and operation of the standby gas treatment system. Two instrument channels monitor the radiation from the refueling area ventilation exhaust ducts and two instrument channels monitor the building ventilation below the refueling floor.

A third set of two radiation monitors is included in the Offgas Vent Stack. The Offgas Vent Stack radiation monitors initiate a Group III isolation as a convenient means to terminate primary containment VENTING or PURGING upon detection of high radiation in the effluent. This isolation signal was added in response to NUREG 0737, Item II.E.4.2(7). When these instruments are not OPERABLE, the activity for which the isolation was intended must be terminated or administrative control must be implemented. The VENTING or PURGING of Primary Containment may proceed under administrative control providing the following conditions are met: (1) an operator is stationed at the valve controls, and (2) that operator is instructed to terminate VENTING or PURGING when procedures direct valve closure.

Trip settings of < 9 mr/hr for the monitors in the refueling area ventilation exhaust ducts are based upon initiating normal ventilation isolation and standby gas treatment operation so that none of the activity released during the refueling accident leaves the Reactor Building via the normal ventilation path but rather all the activity is processed by the standby gas treatment system.

High radiation monitors in the main steam line tunnel have been provided to detect gross fuel failure. In the event of a gross fuel failure, the established setting of 3 times normal full power background radiation levels (accounting for the N-16 carryover due to Hydrogen Water Chemistry) will trip the Mechanical Vacuum Pump, which in turn isolates the suction of the Mechanical Vacuum Pump from the high and low pressure condensers. This prevents the release of untreated fission products to the environment via the Mechanical Vacuum Pump.

Flow integrators are used to record the integrated flow of liquid from the drywell sumps. The alarm unit in each timer is set to annunciate before the values specified in Specification 3.6.C are exceeded. An air sampling system is also provided, as a backup to the sump system, to detect leakage inside the primary containment.