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

August 11, 2000

Mr. Michael B. Sellman, President
Nuclear Management Company, LLC
700 First Street
Hudson, WI 54016

SUBJECT: DUANE ARNOLD ENERGY CENTER - ISSUANCE OF AMENDMENT (TAC NO. MA5657)

Dear Mr. Sellman:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No.233 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center (DAEC). This amendment consists of changes to the Technical Specifications (TS) in response to your application dated May 10, 1999, as supplemented April 6, April 26, and June 5, 2000.

The amendment revises the TS to establish the actions in TS 3.7.4, "Standby Filter Unit (SFU) System," to be taken for an inoperable SFU System due to a degraded control building boundary.

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

Sincerely,

Brenda Mozafari

Brenda L. Mozafari, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-331

Enclosures: 1. Amendment No.233 to License No. DPR-49
2. Safety Evaluation

cc w/encls: See next page

August 11, 2000

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/RA/

Brenda L. Mozafari, Project Manager, Section 1
Project Directorate III
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

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Duane Arnold Energy Center

cc:

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UNITED STATES
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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. 233
License No. DPR-49

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

   A. The application for amendment by IES Utilities Inc., et al., dated May 10, 1999, as supplemented April 6, April 26, and June 5, 2000, complies with the standards and requirements of the Atomic Energy Act of l954, 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 l0 CFR Part 5l 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. 233 , 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 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Claudia M. Craig

Claudia M. Craig, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: August 11, 2000

ATTACHMENT TO LICENSE AMENDMENT NO.233

FACILITY OPERATING LICENSE NO. DPR-49

DOCKET NO. 50-331

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised areas are identified by amendment number and contain marginal lines indicating the areas of change. Bases pages are included for information only.

Remove	Insert
3.7-7	3.7-7
3.7-8	3.7-8
3.7-9	3.7-9
B 3.7-20	B 3.7-20
B 3.7-21	B 3.7-21
B 3.7-22	B 3.7-22
B 3.7-23	B 3.7-23
B 3.7-24	B. 3.7-24

3.7 PLANT SYSTEMS

3.7.4 Standby Filter Unit (SFU) System

LCO 3.7.4 Two SFU subsystems shall be OPERABLE.

---NOTE---
The control building boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, and 3,
During movement of irradiated fuel assemblies in the secondary containment,
During CORE ALTERATIONS,
During Operations with a Potential for Draining the Reactor Vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SFU subsystem inoperable.	A.1 Restore SFU subsystem to OPERABLE status.	7 days
B. Two SFU subsystems inoperable due to inoperable control building boundary in MODES 1, 2, and 3.	B.1 Restore control building boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ---------- D.1 Place OPERABLE SFU subsystem in the isolation mode. OR D.2.1 Suspend movement of irradiated fuel assemblies in the secondary containment. AND D.2.2 Suspend CORE ALTERATIONS. AND D.2.3 Initiate action to suspend OPDRVs.	 Immediately Immediately Immediately Immediately
E. Both SFU subsystems inoperable in MODE 1, 2, or 3 for reasons other than CONDITION B.	E.1 Enter LCO 3.0.3.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Both SFU subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.	----------NOTE---------- LCO 3.0.3 is not applicable. ----------	
	F.1 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	AND	
	F.2 Suspend CORE ALTERATIONS.	Immediately
	AND	
	F.3 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Operate each SFU subsystem for ≥ 15 minutes.	31 days
SR 3.7.4.2	Perform required SFU filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

(continued)

BASES

LCO (continued)

b. HEPA filter and charcoal adsorbers are not excessively restricting flow and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In addition, the control room boundary must be maintained in a condition sufficiently leak-tight such that the pressurization limit of SR 3.7.4.4 can be met. However, it is acceptable for access doors to be open for normal control room entry and exit and not consider it to be a failure to meet the LCO.

The LCO is modified by a Note allowing the control building boundary to be opened intermittently under administrative controls. For entry and exit through the doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings these controls consist of stationing a dedicated individual at the opening who is in continuous commununication with the control room. This individual will have a method to rapidly close the opening when a need for control building isolation is indicated.

APPLICABILITY

In MODES 1, 2, and 3, the SFU System must be OPERABLE to control operator exposure during and following a DBA, since the DBA could lead to a fission product release.

In MODES 4 and 5, the probability and consequences of a DBA are reduced because of the pressure and temperature limitations in these MODES. Therefore, maintaining the SFU System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases can be postulated:

a. During Operations with Potential for Draining the Reactor Vessel (OPDRVs);

b. During CORE ALTERATIONS; and

c. During movement of irradiated fuel assemblies in the secondary containment.

(continued)

BASES (continued)

ACTIONS

A.1

With one SFU subsystem inoperable, the inoperable SFU subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining OPERABLE SFU subsystem is adequate to perform control room radiation protection. However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced SFU System capability. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and that the remaining subsystem can provide the required capabilities.

B.1

If the control building boundary is inoperable in MODES 1, 2, and 3 such that the SFU subsystems can not establish or maintain the required pressure, action must be taken to restore an OPERABLE control building boundary within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the availability of the SFU system to provide a filtered environment (albeit with potential control building in-leakage).

C.1 and C.2

In MODE 1, 2, or 3, if the inoperable SFU subsystem or control building boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D.1, D.2.1, D.2.2, and D.2.3

LCO 3.0.3 is not applicable in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, the Required Actions of Condition D are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the

(continued)

BASES

ACTIONS

D.1, D.2.1, D.2.2, and D.2.3 (continued)

fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, if the inoperable SFU subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE SFU subsystem may be placed in the isolation mode (i.e., one SFU subsystem in operation with the control building isolated). This action ensures that the remaining subsystem is OPERABLE, that no failures that would prevent automatic actuation will occur, and that any active failure will be readily detected.

An alternative to Required Action D.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the secondary containment must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, action must be initiated immediately to suspend OPDRVs to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Action must continue until the OPDRVs are suspended.

E.1

If both SFU subsystems are inoperable in MODE 1, 2, or 3 for reasons other than an inoperable control building boundary (i.e., Condition B), the SFU System may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

F.1, F.2, and F.3

LCO 3.0.3 is not applicable in MODE 4 or 5. However, since

(continued)

BASES

ACTIONS

F1, F2, and F3 (continued)

irradiated fuel assembly movement can occur in MODE 1, 2, or 3, the Required Actions of Condition F are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

During movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, with two SFU subsystems inoperable, action must be taken immediately to suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in the secondary containment must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. If applicable, action must be initiated immediately to suspend OPDVRs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Action must continue until the OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

Operating each SFU subsystem for ≥ 15 minutes ensures that both subsystems are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage or fan or motor failure, can be detected for corrective action. Since the SFU charcoal is tested at a Relative Humidity ≥ 95%, extended operation of the electric heaters is not required. Thus, each subsystem need only be operated for ≥ 15 minutes to demonstrate the function of each subsystem. The function of the SFU electric heaters is to pre-heat incoming air to above 40°F to ensure adsorption occurs within the temperature range that charcoal testing is performed. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.4.2

This SR verifies that the required SFU testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.4.3

This SR verifies that on an actual or simulated initiation signal, each SFU subsystem starts and operates. This SR also ensures that the control room isolates. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.7.1, "Standby Filter Unit Instrumentation," overlaps this SR to provide complete testing of the safety function. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

SR 3.7.4.4

This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the SFU System. During the emergency mode of operation, the SFU System is designed to slightly pressurize the control room $\geq$ 0.1 inches water gauge above atmospheric pressure, under calm wind conditions (i.e. less than 5 mph wind speed) to prevent unfiltered inleakage. The SFU System is designed to maintain this positive pressure at a flow rate of 1000 cfm $\pm$ 10% to the control room in the isolation mode. The Frequency of 24 months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration systems SRs.

REFERENCES

1. UFSAR, Section 6.4.
2. UFSAR, Section 9.4.4.
3. UFSAR, Chapter 15.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 233 TO FACILITY OPERATING LICENSE NO. DPR-49

IES UTILITIES INC.

CENTRAL IOWA POWER COOPERATIVE

CORN BELT POWER COOPERATIVE

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

1.0 INTRODUCTION

By letter dated May 10, 1999, as supplemented April 6, April 26, and June 5, 2000, IES Utilities, Inc. (IES/licensee) submitted a request for changes to the Duane Arnold Energy Center Technical Specifications (TS). The requested changes would revise TS 3.7.4, "Standby Filter Unit (SFU) System," to establish actions to be taken for an inoperable SFU System due to a degraded control building boundary (CBB). This revision approves changes that would allow up to 24 hours to restore the CBB to operable status when two SFU trains are inoperable due to an inoperable CBB in MODES 1, 2, and 3. In addition, a Limiting Condition for Operation (LCO) Note would be added to allow the CBB to be opened intermittently under administrative control without affecting SFU System operability. The applicable TS Bases have been revised to document the TS changes and to provide supporting information. This change is based on Technical Specification Task Force (TSTF-287) to the Standard Technical Specifications. The April 6, April 26, and June 5, 2000, submittals provided additional clarifying information that did not change the initial proposed no significant hazards consideration determination, or expand the scope of the application as noticed in the Federal Register.

2.0 BACKGROUND

The existing LCO 3.7.4 surveillance requirements that test the integrity of the control building boundary require a positive pressure limit to be satisfied with one ventilation train operating. While other surveillance requirements in the same specification test the operability and function of the ventilation train, the pressure test ensures that the control building boundary leak tightness is adequate to meet design assumptions for post-accident operator doses.

Currently, there are no corresponding Conditions, Required Actions, or Completion Times specified in LCO 3.7.4 in case the control building boundary surveillance is not met. Under the

existing specifications, LCO 3.0.3 must be entered (for two-train inoperability). Requiring the plant to enter LCO 3.0.3 when the ventilation boundary is not intact does not provide time to effect required repairs or corrective maintenance activities.

The proposed change is similar in nature to LCO 3.6.4.1 for the secondary containment. LCO 3.6.4.1 allows 24 hours to restore the envelope to operable status before requiring an orderly shutdown from operating conditions.

3.0 EVALUATION

As presented in the licensee's submittal, the proposed changes are:

a. A Note has been added to LCO 3.7.4 for the SFU System to allow the control building boundary to be opened intermittently under administrative control. Corresponding Bases have been added which establish the administrative controls that are required to minimize the consequences of the open boundary.

b. A new Condition B is added to LCO 3.7.4 to specify that 24 hours are allowed to restore an inoperable control building boundary to operable status. All other Conditions have been administratively re-labeled to support this change. Corresponding Bases are added to support this change.

c. Condition E of LCO 3.7.4 for two inoperable SFU trains in Modes 1-3 is modified to exclude entry into this condition when the trains are inoperable because of the degraded control building boundary. The associated Bases for Condition E are revised accordingly.

The LCO is modified by a Note allowing the control building boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room area isolation is indicated.

If the control room boundary is inoperable in MODES 1, 2, or 3 such that the SFU trains cannot establish or maintain the required pressure, action must be taken to restore an OPERABLE control building boundary within 24 hours. The 24-hour Completion Time is reasonable based on the low probability of a design basis accident occurring during this time period and compensatory measures available to the operator to minimize the consequences of potential hazards.

The proposed changes would allow 24 hours (during Modes 1, 2, or 3) to restore the capability to maintain control building boundary pressure before requiring the unit to perform an orderly shutdown and also allows intermittent opening of the control room boundary under administrative control. During the period that the control building boundary is inoperable appropriate compensatory measures consistent with the intent of 10 CFR 50 Appendix A, General Design Criteria (GDC) 19 will be utilized to protect the control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity and to ensure physical security. These preplanned measures will be available to address these concerns for intentional and unintentional entry into the condition. For

example, when the control building boundary is opened for other than entry through doors, the proposed Bases indicate that in addition to other necessary measures a dedicated individual will be stationed in the area in continuous contact with the control room to rapidly restore the boundary.

Additionally, the proposed change is considered acceptable because of the low probability of an event requiring an intact control room boundary during the 24-hour ACTION Completion Time associated with Condition "B".

Based on the low probability of an event occurring in this time and the availability of compensatory measures consistent with GDC 19 to minimize the consequences during an event, the proposed change is considered acceptable and is in conformance with TSTF-287.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Iowa State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 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. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent that may be released offsite, 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 (64 FR 38029). 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.

6.0 CONCLUSION

The NRC staff has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) 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: R. Giardina, RTSB

Date: August 11, 2000