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 MCGAUGHY, R. W. Iowa Electric Light & Power Co.
 RECIP. NAME RECIPIENT AFFILIATION
 DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125)

SUBJECT: Application for amend to License DPR-49, revising Tech Spec requirements for demonstrating jet pump operability to be consistent w/improved GE monitoring guidelines. Fee paid.

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Iowa Electric Light and Power Company

September 15, 1986

NG-86-3011

Mr. Harold Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Technical Specification Change (RTS-206)
Jet Pump Operability
File: A-117a

Dear Mr. Denton:

We hereby request revision of the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC) in accordance with the Code of Federal Regulations, Title 10, Sections 50.59 and 50.90.

This proposed change (RTS-206) revises the current Technical Specification requirements for demonstrating jet pump operability to be consistent with the improved monitoring guidelines contained in GE SIL No. 330. The application has been reviewed by the DAEC Operations Committee and DAEC Safety Committee. In accordance with the fee schedule for license amendments (10 CFR 170), a check for \$150 is enclosed. The balance of the fee will be paid upon billing.

A copy of this submittal, which includes a no significant hazards considerations analysis, is being forwarded to our appointed state official pursuant to the requirements of 10 CFR 50.91.

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P PDR

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Mr. Harold Denton
September 15, 1986
NG-86-3011
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This application, which consists of three signed originals and 37 copies with their enclosures, is true and accurate to the best of my knowledge and belief.

IOWA ELECTRIC LIGHT AND POWER COMPANY

BY Richard W. McGaughy
Richard W. McGaughy
Manager, Nuclear Division

Subscribed and sworn to Before Me on
this 15th day of September 1986.

Kathleen M. Furman
Notary Public in and for the State of Iowa

RWM/RAB/ta*

Attachments: 1) Evaluation of Change Pursuant to 10 CFR 50.92
2) Proposed Change RTS-206 including List of Affected Pages

cc: R. Browning
L. Liu
L. Root
M. Thadani
NRC Resident Office
T. Houvenagle (UD)

EVALUATION OF CHANGE WITH RESPECT TO 10 CFR 50.92

Background:

In response to failures of jet pump hold-down beams at several operating BWRs, the NRC issued IE Bulletin 80-07. This bulletin required, in addition to performing examinations of these hold-down beams, that a surveillance program to monitor jet pump performance be initiated and continued until plant technical specifications could be changed. Iowa Electric initiated and continues to follow such a program, using the guidance contained in the bulletin. General Electric subsequently issued SIL No. 330, "Jet Pump Beam Cracks," which discusses the jet pump beam failure problem and gives recommendations for modifications to the technical specifications to improve detection of any impending failure of these beams. Iowa Electric proposes to amend the Technical Specifications and the surveillance program for the Duane Arnold Energy Center (DAEC) to incorporate the SIL 330 recommendations.

These changes also reflect recent NRC staff guidance in the Safety Evaluation Report on Amendment 42 to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant, dated March 27, 1986. This additional guidance specifies that if the surveillance requirements are not met at low pump speeds (<60% of rated), then daily evaluations of jet pump performance must be conducted until the evaluation can be conducted at higher pump speeds where the results are more conclusive. This additional surveillance will assure that any jet pump degradation will be detected prior to jet pump failure.

Iowa Electric Light and Power Company, Docket No. 50-331,

Duane Arnold Energy Center, Linn County, Iowa

Date of Amendment Request:

Description of Amendment Request: The proposed license amendment would revise the Duane Arnold Energy Center (DAEC) Technical Specification Sections 3.6.E and 4.6.E and the associated bases to reflect the latest General Electric guidance on jet pump operability and surveillance requirements.

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.

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. These changes are based upon GE's recommendations (SIL #330) and are derived from evaluation of actual in-plant data from facilities where failures of jet pump hold-down beams have occurred. The NRC has approved the same Technical Specification changes for facilities similar to the DAEC. The jet pump flow and ΔP signals are inherently noisy at low pump speed/core flow. This is because the natural circulation effects dominate the flow through the core. As the pump speed increases, the forced circulation overcomes the natural circulation and the process stabilizes, allowing more reliable readings of jet pump performance to be obtained. The present Technical Specifications require an immediate plant shutdown if the present surveillance

requirements are not met, even at the low speeds where the readings are often anomalous. Since the actual beam failure mode is a slow, progressively degrading process which can be trended, the requirement to perform daily evaluations at low pump speeds (<60%) will ensure that true degradation is observed and will allow for anomalous data to be discounted without forcing an unnecessary plant shutdown, as with the present Technical Specifications. Therefore, these changes to the Technical Specification requirements will have no impact on either the probability or consequences of a jet pump failure from those previously analyzed; they will improve our ability to detect true degradation in jet pump performance before hold-down beam failure actually occurs.

- (2) does not create the possibility of a new or different kind of accident. These surveillances do not require any plant equipment to be manipulated, only that data be recorded from existing control room instrumentation; therefore, the possibility of an accident different from those previously analyzed is not created.
- (3) does not involve a significant reduction in a margin of safety because the purpose for the present Technical Specification is the detection of a jet pump failure which could cause the plant to operate outside of its analyzed condition. These changes will improve our ability to detect true degradation in jet pump performance before such failures can occur. Therefore, the margin of safety is not reduced.

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (April 6, 1983, 48 FR 14870). One of these, example (ii) of amendments not likely to involve significant hazards considerations is "A change that constitutes an additional limitation, restriction, or control not presently included in the Technical Specifications: for example, a more stringent surveillance requirement." The proposed changes in this application for amendment are encompassed by this example because the revisions to the Technical Specifications would clarify the Limiting Conditions for Operation and Surveillance Requirements associated with jet pump operability. The proposed surveillance program would provide additional assurance that jet pump degradation will be detected before actual jet pump failure. The proposed changes would prescribe a program to monitor various parameters, such as core flow, core plate differential pressure, recirculation pump flow and speed, from which the acceptability of jet pump performance can be more accurately determined. The proposed Limiting Conditions for Operation contain the minimum acceptable standards for jet pump operability and when they are not met, the reactor would be shut down within 24 hours. In addition, the proposed surveillance requirements will include evaluation of the jet pump deviation every 24 hours whenever the recirculation pump speed is below 60%. The proposed surveillance program would provide additional assurance that jet pump degradation will be detected before actual jet pump failure. By being a better diagnostic tool, the proposed changes would add more control for plant operations.

Therefore, since the application for amendment involves proposed changes similar to example (ii), we have determined that this application involves no significant hazards consideration.

Local Public Document Room Location: Cedar Rapids Public Library, 500 First Street SE, Cedar Rapids, Iowa 52401

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

PROPOSED CHANGE RTS-206 TO THE
DUANE ARNOLD ENERGY CENTER
TECHNICAL SPECIFICATIONS

The holders of license DPR-49 for the Duane Arnold Energy Center propose to amend Appendix A (Technical Specifications) to said license by deleting current pages and replacing them with the attached, new pages. A List of Affected Pages is given below.

In response to failures of jet pump hold-down beams at several operating BWRs, the NRC issued IE Bulletin 80-07. This bulletin required, in addition to performing examinations of these hold-down beams, that a surveillance program to monitor jet pump performance be initiated and continued until plant technical specifications could be changed. Iowa Electric initiated and continues to follow such a program, using the guidance contained in the bulletin. General Electric subsequently issued SIL No. 330, "Jet Pump Beam Cracks," which discusses the jet pump beam failure problem and gives recommendations for modifications to the technical specifications to improve detection of any impending failure of these beams. Iowa Electric proposes to amend the Technical Specifications and the surveillance program for the Duane Arnold Energy Center (DAEC) to incorporate the SIL 330 recommendations. These changes also reflect recent NRC staff guidance in the Safety Evaluation Report on Amendment 42 to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant, dated March 27, 1986. This additional guidance specifies that if the surveillance requirements are not met at low pump speeds (<60% of rated), then daily evaluations of jet pump performance must be conducted until the evaluation can be conducted at higher pump speeds where the results are more conclusive. This additional surveillance will assure that any jet pump degradation will be detected prior to jet pump failure.

The following is an item-by-item list of the individual changes being made to the DAEC Technical Specifications:

- 1) Revise the Limiting Condition for Operation for jet pump operability (Section 3.6.E) to specify the actions to be taken if the surveillance requirements cannot be met. Different actions are indicated depending upon the value of recirculation pump speed. For speeds less than 60% of rated, additional daily surveillances are required until the specified evaluations are performed at higher pump speeds. If the speed is greater than or equal to 60% of rated and the requirements are not met, i.e., the jet pumps are verified to be inoperable, the reactor must be in a cold shutdown condition within 24 hours.
- 2) Revise the Surveillance Requirements for jet pump operability (Section 4.6.E) to incorporate the improvements in monitoring performance of jet pumps, outlined in GE SIL No. 330, as follows:
 - a) delete the "simultaneous" requirement of the present Technical Specifications, as it is no longer needed to ensure that anomalous readings are discounted.

- b) replace the present performance parameters (flow imbalance and independent core flow measurements) with better indicators of jet pump performance, i.e., ratios of recirculation pump flow to pump speed and jet pump loop flow to recirculation pump speed.
 - c) revise the acceptance requirement for deviation of individual jet pump differential pressure (ΔP) from average loop ΔP from the present 10% to 20%.
 - d) clarify the present requirements to specify that, during single loop operation (SLO), the surveillance requirements of 4.6.E.1 and .2 apply only to the active loop.
 - e) add a requirement to update the baseline data base after each refueling to ensure that any changes due to the new core loading are incorporated into the data base.
- 3) Update the Bases section for 3.6.E/4.6.E to reflect the above changes.

LIST OF AFFECTED PAGES

3.6-6
3.6-7
3.6-30
3.6-31
3.6-32