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RECIP. NAME RECIPIENT AFFILIATION
DENTON, H. Office of Nuclear Reactor Regulation, Director (post 851125

SUBJECT: Application for amend to License DPR-49, consisting of Tech Specs change Request (RTS-192), changing basis for verifying control rod scram times & revising internal refs. Fee paid.

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Iowa Electric Light and Power Company

August 29, 1986
NG-86-0112

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-192)
Control Rod Scram Time Testing
File: A-117

Dear Mr. Denton:

In accordance with the Code of Federal Regulations, Title 10, Sections 50.59 and 50.90, Iowa Electric Light and Power Company hereby requests revision of the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC).

This proposed amendment is being made to change the basis for verifying control rod scram times and to revise the internal references.

The application (proposed change RTS-192) 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.

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

A001 w/check no $150 # 085109

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 2nd day of September 1986.

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

RWM/EFB/ta*

Attachments: 1) Evaluation of Change Pursuant to 10 CFR 50.92
2) Proposed Change RTS-192 including List of Affected Pages

cc: E. Borton
L. Liu
L. Root
M. Thadani
NRC Resident Office
J. Keppler (NRC R-III)
T. Houvenagle (UD)
Commitment Control No. 850188

EVALUATION OF CHANGE WITH RESPECT TO 10 CFR 50.92

Background:

The control rod system is designed to bring the reactor subcritical at a rate fast enough to prevent fuel damage, i.e., to prevent the Minimum Critical Power Ratio (MCPR) from becoming less than the allowable safety limit. After initial fuel loading and subsequent refuelings all control rods are required to be scram tested within the constraints of the Plant Technical Specifications. The requirements for the various scram insertion time measurements in Plant Technical Specification Section 3.3.C ensure that any indication of systematic problems with control rod drives will be investigated on a timely basis.

The present rod scram insertion times provided in Plant Technical Specification Section 3.3.C were utilized in the General Electric ODYN Option B Computer Reload Analysis to establish limits on fuel performance (i.e., MCPR) and are based on percentage of rod insertion from fully withdrawn. A third parameter "rod position" was provided in Subsections 3.3.C.1 and .2 of Section 3.3.C to facilitate plant rod scram time testing because percent inserted indication is not available from plant instrumentation while even rod positions are. As such, Subsections 3.3.C.1 and .2, in addition to percent inserted, also provided the closest conservative even rod position corresponding to the percent inserted. During the beginning of cycle scram time tests for Cycle 8, it was discovered that the scram time for 5% insertion could not be met using Rod Position 44. Rod Position 44 is an unnecessarily conservative representation of 5% insertion, as it is actually 8.33% inserted. Rod Position 44 was originally chosen because Rod Position 46 was nonconservative (4.17% inserted) and odd rod positions are not instrumented.

As such, this license amendment is proposed to change the rod scram time basis from a percentage insertion basis to a rod position basis to more accurately determine rod scram times based on directly obtainable plant data. This license amendment also proposes administrative changes to achieve consistency in nomenclature throughout the Technical Specifications.

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

Duane Arnold Energy Center, Linn County, Iowa

Date of Amendment Request: August 29, 1986

Description of Amendment Request: The proposed amendment would revise the Duane Arnold Energy Center (DAEC) Technical Specification Section 3.3.C to change the basis for verifying rod scram times from the present basis; scram timing to percentage of rod insertion, to the basis proposed by this amendment;

scram timing to actual rod position. The rod scram times in Subsections 3.3.C.1 and 3.3.C.2 of Section 3.3.C would be changed to correspond directly with the rod positions as utilized in the General Electric ODYN Option B Computer Reload Analysis. Changing the scram time in Subsection 3.3.C.3 of Section 3.3.C to directly correspond to the proposed even rod position 04 instead of 90% inserted is not necessary because rod position 04 is equivalent to 91.67% inserted and is therefore still conservative. The Technical Specification Surveillance Requirement 4.3.C would also be revised to clarify rod scram time testing based on rod position rather than percentage insertion.

This amendment also proposes to administratively revise Technical Specification numbering of subsections in the Bases discussions to match the numbering system in the Technical Specification sections being addressed and correct nomenclature errors in the basis discussions.

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 because the verification of scram times can be based on a percentage of rod insertion from fully withdrawn or on indicated rod position from fully withdrawn provided the scram insertion times correspond to either basis. Both the percentage insertion basis with corresponding scram times and the rod position basis with corresponding scram times are utilized in the General Electric ODYN Option B Computer Reload Analysis. Therefore, either basis for scram time testing demonstrates the ability of the control rod system to bring the reactor subcritical at a rate fast enough to prevent fuel damage, i.e., to prevent the MCPR from becoming less than the safety limit. The change from percentage insertion to equivalent even rod position in Section 3.3.C.3 will provide uniformity in the basis of all rod scram timing activities in the plant. Changing the scram time to directly correspond to the proposed even rod position 04 instead of 90% insertion is not necessary because rod position 04 is equivalent to 91.67% insertion and is therefore still conservative.

(2) does not create a possibility of a new or different kind of accident because neither the rod scram insertion time requirements nor the equipment or process involved has changed. Rod scram time testing based on rod position is consistent with established plant testing capabilities and procedures and will increase the accuracy of rod scram time testing.

(3) does not involve a significant reduction in a margin of safety because the margin of safety derived from the General Electric ODYN Option B Computer Analysis MCPR limits is based on verifying average rod insertion times utilized in this reload analysis. The rod positions and corresponding rod scram times proposed in this amendment are utilized in the General Electric ODYN Option B Computer Reload Analysis. Therefore, the MCPR limits defined by this analysis remain unchanged. The administrative changes proposed in this amendment are to achieve consistency in nomenclature throughout the Technical Specifications.

In the April 6, 1983 Federal Register, the NRC published a list of examples of amendments that are not likely to involve a significant hazards concern. Examples (i) and (vi) of that list state:

(i) A purely administrative change to technical specifications: for example, a change to achieve consistency throughout the technical specifications, correction of an error, or a change in nomenclature.

(vi) A change which either may result in some increase to the probability or consequences of a previously-analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria with respect to the system or component specified in the Standard Review Plan: for example, a change resulting from the application of a small refinement of a previously used calculational model or design method.

Calculation of scram reactivity for the General Electric ODYN Option B Computer Reload Analysis MCPR limits is based on meeting maximum average scram times provided in Technical Specification Sections 3.3.C.1 and .2. The verification of scram times can be based on percentage insertion or rod position provided the scram insertion times (Technical Specification Sections 3.3.C.1 and .2) correspond to either basis. Both the percentage insertion basis with corresponding scram times and the rod position basis with corresponding scram times are included in the General Electric ODYN Option B Computer Reload Analysis. As such, this amendment proposes a change based on a small refinement of a previously used analysis.

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

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