

Iowa Electric Light and Power Company

May 23, 1991
NG-91-1352

RICHARD W. McGAUGHY
VICE PRESIDENT, PRODUCTION

James G. Partlow, Assistant Director for Projects
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Request for Temporary Waiver of Compliance: Main
Steamline Isolation Valves Weekly Surveillance
Requirements

Reference: Letter, D.L. Mineck (Iowa Electric) to Dr. T.E. Murley
(NRC) dated December 14, 1990, NG-90-2839

File: A-117, N-11

Dear Mr. Partlow:

We request a Waiver of Compliance with the DAEC Technical Specification (TS) requirement to exercise the main steamline isolation valves (MSIVs) each week. Specifically, TS 4.7.D.1.c requires that MSIVs be exercised by a partial closure at least once per week. This exercise is not necessary in order to assure that the valves will perform their safety function, as we explained in the referenced submittal which requested a TS change deleting the weekly exercise requirement. The safety function of the MSIVs is tested quarterly by a full stroke fast closure test as required by TS 4.7.D.1.b(2). The referenced submittal concluded that elimination of the weekly MSIV exercise involves no significant hazards consideration and will decrease the probability of inadvertent transients and challenges to relief valves. Those conclusions continue to be valid.

This Waiver of Compliance is needed to avoid potential damage to one of the MSIVs which has recently (on May 19) exhibited signs of stem galling. The partial stroke exercise could accelerate the stem galling, causing the valve to bind and become inoperable and necessitating a forced outage to repair the valve. These valves were rebuilt in our most recent refueling outage. We had no evidence of any galling problems with the MSIVs before May 19, therefore this situation was not foreseen and could not have been avoided. We request that the Waiver continue until such time as the permanent TS change requested on December 14, 1990 can be approved. We have identified no compensatory measures which need to be taken.

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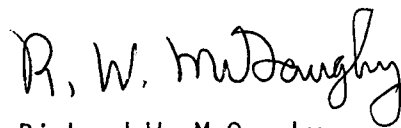
Mr. James G. Partlow
May 23, 1991
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This request has been reviewed and approved by the DAEC Operations Committee. We have concluded that no irreversible environmental consequences are involved in this request because no change in the types or quantities of effluents will result and no increases in individual or cumulative occupational radiation exposure will occur.

A copy of the December 14 submittal is enclosed for your convenience.

If you have any questions regarding this matter, please contact this office.

Very truly yours,



Richard W. McGaughy
Vice President, Production

DLM/DJM/pjv+

cc: D. Mienke
L. Liu
L. Root
D. Mineck
S. Sands (NRC-NRR)
A. Bert Davis (Region III)
NRC Resident Office

Iowa Electric Light and Power Company

December 14, 1990
NG-90-2839

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Request for Technical Specification Change (RTS-236)
"Removal of Weekly Main Steamline Power-Operated
Isolation Valves Weekly Surveillance Requirements"
File: A-117, N-11

Dear Dr. Murley:

In accordance with the Code of Federal Regulations, Title 10, Sections 50.59 and 59.90, we request revision of the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC).

The purpose of the proposed change (RTS-236) is to delete the requirement to exercise the Main Steamline Isolation Valves (MSIV) weekly by partial closure and reopening. The MSIVs will continue to be full stroke tested on a quarterly basis, which is consistent with BWR Standard Technical Specifications and the ASME Boiler and Pressure Vessel Code.

This application has been reviewed by the DAEC Operations Committee and the DAEC Safety Committee. 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.

9012260216 JPP
U.S. Nuclear Regulatory Commission, Washington, DC 20555

Dr. Thomas E. Murley
December 14, 1990
NG-90-2839
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This letter is true and accurate to the best of my knowledge and belief.

IOWA ELECTRIC LIGHT AND POWER COMPANY

By *Daniel L. Mineck*
DANIEL L. MINECK
Manager, Nuclear Division

State of Iowa
(County) of Linn

Signed and sworn to before me on
this 14th day of December, 1990,
by *Daniel L. Mineck*

Kathleen M. Furman
Notary Public in and for the State of Iowa
September 28, 1992
Commission Expires

DLM/D M/pjv+

Attachments: 1) EVALUATION OF CHANGE WITH RESPECT TO 10CFR50.92
2) PROPOSED CHANGE RTS-236 TO THE DUANE ARNOLD ENERGY CENTER
3) SAFETY ASSESSMENT

cc: D. Mienke
L. Liu
L. Root
R. McGaughy
S. P. Sands (NRC-NRR)
A. Bert Davis (Region III)
J. Eure (State of Iowa)
NRC Resident Office

EVALUATION OF CHANGE WITH RESPECT TO 10 CFR 50.92

Background:

DAEC TS Section 4.7.D.1.c requires that the main steam line power-operated isolation valves be exercised at least once per week by partial closure and reopening.

When the partial closure of the MSIV is performed, a test solenoid is manually energized. Energizing this solenoid causes a three way test pilot valve to change position, allowing a slow exhaust of the pneumatic pressure which maintains the MSIV open. The compressed springs in the MSIV exert a force on the stem which closes the MSIV. When the MSIV reaches the 90% open position, a limit switch is tripped indicating that the valve is closing. The test solenoid valve is then automatically de-energized, allowing the affected MSIV to return to the full open position. No reduction in reactor power is required to perform this weekly exercise since the MSIV only goes to 90% of full open and steam flow through the valve is not significantly reduced until the valve is less than 50% of full open.

Deletion of the requirement for weekly exercise of the MSIVs will decrease the probability of inadvertent scrams and transients and challenges to relief valves and, therefore, increase safety.

The NRC has suggested in NUREG-0737, Item II.K.3.16, that challenges to relief valves can be reduced by reducing the testing frequency of MSIVs. Elimination of the requirement for weekly exercise of the MSIVs by partial

closure is consistent with guidance provided by NRC in NUREG-0737, Item II.K.3.16.

A review of the BWR Standard Technical Specifications and the ASME Boiler and Pressure Vessel Code indicates that neither of these documents requires a weekly exercise such as is specified in DAEC Technical Specification (TS) 4.7.D.1.c. The only purpose for the weekly partial closure exercise that we have identified is to ensure that the MSIVs and their pilot valves are not binding. However, this is adequately demonstrated during the quarterly fast closure and reopening which is required by TS 4.7.D.1.b(2).

We determined through discussions with our NSSS vendor (General Electric) that the weekly exercise of the MSIVs was originally intended to demonstrate that the MSIV pilot valve is not binding by exercising the test pilot valve which is of the same design as the actual MSIV pilot valve. However, the pilot valves which were originally susceptible to binding have been replaced with valves of a design that is not susceptible to binding. The DAEC utilizes these replacement parts although plant Technical Specifications have not been revised to remove the weekly exercise of MSIVs.

It has been found that there is an error in the first footnote of Table 3.7-3 for the surveillance requirements of the Main Steam Line Valves. The footnote states: "Due to plant operational limitations, these valves will be subject to the requirements of 4.7.D.1.a only". The footnote should state "Due to plant operational limitations, these valves will be subject to the requirements of 4.7.D.1.a except for the MSIVs which will

be subject to 4.7.D.1.b". TS 4.7.D.1.b specifies that the MSIVs are to be tested quarterly by full stroke fast closure and reopening.

We consider this exercise of MSIVs to be unnecessary and its elimination will not reduce plant safety. Therefore, it is proposed that TS 4.7.D.1.c on page 167 of the DAEC Technical Specifications be deleted, TS 4.7.D.1.d be renumbered to 4.7.D.1.c and the first footnote of Table 3.7-3 be corrected as specified above.

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

Duane Arnold Energy Center, Linn County, Iowa

Date of Amendment Request: December 14, 1990

Description of Amendment Request:

By its submittal dated December 14, 1990, Iowa Electric Light and Power (IELP) has proposed a license amendment which removes the weekly exercise surveillance of MSIVs (4.7.D.1.c) and corrects an error in the first footnote of Table 3.7-3 from the DAEC Technical Specifications. This proposal is consistent with guidance provided by NRC in NUREG-0737, Item II.K.3.16, reducing challenges to relief valves due to MSIV testing, our Scram Frequency Reduction Program, ASME Boiler and Pressure Vessel Code, BWR Standard Technical Specifications, and previously approved amendments for Nebraska Public Power's Cooper Station (approved August 8, 1988) and Tennessee Valley Authority's Browns Ferry Units 1, 2 and 3 (approved March 1, 1988).

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 reached these conclusions:

1. The proposed license amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated. This proposed change deletes the requirements to exercise the MSIVs weekly. That exercise involves partial closure of each individual valve to the 90% open position and reopening to the full open position.

The safety function of the MSIV is to isolate the main steamline in case of a steamline break or Control Rod Drop Accident in order to limit the loss of reactor coolant and/or the release of radioactive materials. The MSIVs perform a safety function which mitigates the consequences of accidents; however, an event can be initiated by the inadvertent closure of the MSIVs. Therefore, eliminating excessive operation of the MSIVs reduces the probability of occurrence of an

inadvertent closure. Also, the surveillance which is being deleted does not test the safety function of the MSIVs. The safety function is tested during the quarterly full stroke fast closure test. Since deleting the weekly exercise of the valves is not considered to have any effect on the reliability of the MSIVs to perform their safety function, there is no increase in the consequences of any postulated accidents. Therefore, deleting the requirement for weekly exercise of the MSIVs does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed license amendment does not create the possibility for an accident. The safety function of the MSIVs is to mitigate the consequences of accidents by isolating the main steamline in order to limit the release of reactor coolant and/or radioactive materials. The MSIVs do not prevent the occurrence of any accident; however, an event can be initiated by the inadvertent closure of the MSIVs. This event (Group One Isolation) has been previously evaluated in Chapter 15 of the Updated Final Safety Analysis Report. Therefore, deleting the requirement to exercise the MSIVs weekly will not create any new or different kind of accident. The weekly exercising of the MSIVs by partial closure does not test the safety function of the valves. The quarterly full stroke fast closure test demonstrates the ability of the MSIVs to perform their safety function. Since the MSIVs perform a mitigating safety function, and the quarterly test adequately tests the safety function, elimination of the weekly exercise will not create any new or different kind of accident.

3. The proposed license amendment does not involve a significant reduction in the margin of safety. The safety function of the MSIV is not tested during the weekly exercise. The ability of the MSIVs to perform their safety function is tested quarterly. Therefore, deletion of the requirement to exercise the MSIVs weekly does not reduce the testing frequency of the MSIVs. The weekly exercise of the MSIVs was originally specified in order to detect binding of the pilot valve, however the type of pilot valves that were susceptible to binding were replaced some time ago and there is no longer any need for frequent operation of the valves. The quarterly full closure test of MSIVs adequately demonstrates that the MSIVs and their pilot valves are not binding and that the MSIVs will perform their safety function. Additionally, reducing the frequency of MSIV operation reduces the probability of inadvertent scrams and transients, and challenges to relief valves, providing a net addition to the margin of safety.

The quarterly full stroke fast closure test is considered to be sufficient. It is the only test required by the ASME Boiler and Pressure Vessel Code and the BWR Standard Technical Specifications (STS). Also, other power operated primary containment isolation valves are tested no more frequently than once per quarter.

Based upon the discussion above, the weekly exercise of the MSIVs does not test the safety function of the MSIVs and the quarterly full stroke fast closure test fulfills the ASME and STS requirements. Therefore, eliminating the weekly exercise of the MSIVs does not significantly reduce any margin of safety.

The proposed changes will not increase the probability or consequences of any previously analyzed accident, introduce any new or different kind of accident from any previously evaluated, or reduce any existing margin of safety. Therefore, this proposed license amendment involves no significant hazards consideration.

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

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

PROPOSED CHANGE RTS-236 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 the current page and replacing it with the attached, new page. The List of Affected Pages is given below.

The attached Technical Specification (TS) pages are being revised to delete the Duane Arnold Energy Center MSIV Weekly Exercise Surveillance 4.7.D.1.c, renumber TS 4.7.D.1.d to 4.7.D.1.c, and correct an error in the first footnote of Table 3.7-3.

List of Affected Pages

3.7-18
3.7-19
3.7-26

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Summary of Changes:

<u>Page</u>	<u>Description of Changes</u>
3.7-18	Delete the MSIV Weekly Exercise Surveillance 4.7.D.1.c
3.7-19	Re-number 4.7.D.1.d to 4.7.D.1.c
3.7-26	Correct the first footnote of Table 3.7-3 to clarify MSIV testing requirement.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
<p>2. If Specification 3.7.C.1 cannot be met:</p> <p>a. Suspend reactor building fuel cask and irradiated fuel movement, and</p> <p>b. Restore secondary containment integrity within one hour; or,</p> <p>c. Be in COLD SHUTDOWN within the following 24 hours.</p> <p>D. <u>Primary Containment Power Operated Isolation Valves</u></p> <p>1. During reactor power operating conditions, all isolation valves listed in Table 3.7-3 and all instrument line flow check valves shall be OPERABLE except as specified in 3.7.D.2.</p>	<p>maintain the remainder of the secondary containment at 1/4 inch of water negative pressure under calm wind conditions.</p> <p>D. <u>Primary Containment Power Operated Isolation Valves</u></p> <p>1. The primary containment isolation valves surveillance shall be performed as follows:</p> <p>a. At least once per operating cycle the OPERABLE isolation valves that are power operated and automatically initiated shall be tested for simulated automatic initiation and closure times.</p> <p>b. At least once per quarter:</p> <p>1) All normally open power operated isolation valves (except for those exempted as noted in Table 3.7-3) shall be fully closed and reopened.</p> <p>2) With the reactor power less than 75%, trip main steam isolation valves individually and verify closure time.</p> <p>c. At least once per operating cycle the operability of the reactor coolant system instrument line flow check valves shall be verified.</p> <p>*Intent Change Only (definition of operating cycle).</p>

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

2. With one or more of the primary containment isolation valves shown in Table 3.7-3 inoperable (except for those exempted as noted in Table 3.7-3), maintain at least one isolation valve OPERABLE* or ISOLATED** and within 4 hours either:
- a. Restore the inoperable valve(s) to OPERABLE status, or
 - b. Isolate each affected penetration by use of at least one automatic valve locked or electrically deactivated in the isolated position,** or
 - c. Isolate each affected penetration by use of at least one manual valve locked in the isolated position or blind flange.**
3. If Specification 3.7.D.1, and 3.7.D.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the Cold Shutdown condition within 24 hours.

*This valve may be locked or electrically deactivated as noted in Subsection 3.7.D.2.b.

**Isolation valves closed to satisfy these requirements may be reopened on an intermittent basis under administrative control.

TABLE 3.7-3 (Continued)
PRIMARY CONTAINMENT POWER OPERATED ISOLATION VALVES

Power Group (Note 1)	Operating Valve Identification	Number of Action on Operated Valves	Maximum Isolation		Initiating Signal
			Time (Seconds)	Normal Position	
5	RWCU Supply	2	20	0	GC
5	RWCU Return	1	10	0	GC
6	Steam to HPCI Turbine	2	13	0	GC
6***	HPCI Discharge to Feedwater	1	20	C	GC
6	Steam to RCIC Turbine	2	20	0	GC
6***	RCIC Discharge to Feedwater	1	15	C	GC
8	Condensate from HPCI	2	NA	0	GC
8**	Condensate from RCIC	2	NA	0	GC
3	*Containment Compressor Discharge	3	NA	0	GC
7	*Reactor Building Closed Cooling Water Supply/Return	2	20	0	GC
7	*Well Cooling Water Supply/Return	4	NA	0	GC
9	HPCI/RCIC Exhaust Vacuum Breaker	2	10	0	GC
3	Post-Accident Sampling Liquid Sample Return	2	NA	C	SC
3	Post-Accident Sampling Jet Pump Sample	4	NA	C	SC

*Due to plant operational limitations, these valves will be subject to the requirements of 4.7.D.1.a except for the MSIVs which will be subject to the requirements of 4.7.D.1.b.

**Low-Low Water Level Only

***These valves close only upon sensing closure of their respective turbine steam supply or turbine stop valve closure.

SAFETY ASSESSMENT

1. INTRODUCTION

By letter dated December 14, 1990, Iowa Electric Light and Power Company requested changes to the Duane Arnold Energy Center (DAEC) Technical Specifications (TS) to delete the requirement to exercise the Main Steam Isolation Valves (MSIVs) weekly by partial closure and reopening denoted in Surveillance Requirement 4.7.D.1.c. Deletion of this requirement would allow the MSIVs to be tested quarterly, consistent with the requirements in 4.7.D.1.b.2 of the DAEC Technical Specifications, BWR Standard Technical Specifications, and the ASME Boiler and Pressure Vessel Code.

2. EVALUATION

The Technical Specifications for the DAEC currently require weekly exercise of the MSIVs by partial closure and reopening. Our request to decrease the frequency of the MSIV testing (to quarterly) is consistent with the guidance provided in NUREG-0737, Item II.K.3.16, and provides for a net increase in safety by decreasing the probability of inadvertent scrams and plant transients and challenges to relief valves.

The increase in safety gained by reducing the possibility of plant events is partially offset by the decrease in surveillance frequency for the MSIVs. However, this decrease is judged to be small as other existing quarterly surveillance requirements ensure not only that the mechanical portion of the MSIV is operable but also tests the logic system utilized in closing the MSIVs. In addition, the MSIVs are exercised monthly (by partial closure) in order to test RPS logic. The weekly exercise requirement only demonstrates operation of a limited part of the mechanical portion of the valve, i.e. that the MSIV and its pilot valve is not binding. With deletion of the weekly MSIV exercise requirement, the current DAEC Technical Specifications still require that MSIVs be tested and closure time be verified on a quarterly basis which is consistent with NRC's guidance as specified in the BWR Standard Technical Specifications and ASME Boiler and Pressure Vessel Code. Consequently, we have concluded that the improvements in transient avoidance more than offset the possible small reduction in MSIV reliability by deleting the weekly surveillance.

Based on the above information we conclude that this request is acceptable.