

PROPOSED CHANGE RTS-266 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 certain current pages and replacing them with the attached, new pages. The List of Affected Pages is given below.

LIST OF AFFECTED PAGES

3.2-23

3.2-24

SUMMARY OF CHANGES:

The following list of proposed changes is in the order that the changes appear in the Technical Specifications.

<u>Page</u>	<u>Description of Changes</u>
3.2-23	<p>Revise the Table 4.2-C requirement to perform a Channel Functional Test on the Rod Block Monitor (RBM) system Upscale, Downscale and Inoperative trips from "within 24 hours prior to Startup" (referenced as existing footnote "b") to "Prior to exceeding 30% RATED THERMAL POWER" (referenced as new footnote "d"). The allowance to not perform the test if performed within the previous 7 days is retained, as is the reference to existing footnote "c."</p> <p>Revise the Table 4.2-C requirement to perform a Channel Functional Test on the Average Power Range Monitor (APRM) system Flow-biased Upscale and Downscale rod block trips from "within 24 hours prior to Startup" (referenced as existing footnote "b") to "within 24 hours after entering RUN and prior to exceeding 25% RTP" (referenced as new footnote "e"). The allowance to not perform the test if performed within the previous 7 days is retained.</p> <p>Revise the Table 4.2-C requirement to perform a Channel Functional Test on the Reactor Recirculation System recirculation flow Upscale, Inoperative and Comparator rod block trips from "within 24 hours prior to Startup" (referenced as existing footnote "b") to "within 24 hours after entering RUN and prior to exceeding 25% RTP" (referenced as new footnote "e"). The allowance to not perform the test if performed within the previous 7 days is retained.</p>
3.2-24	<p>Add new footnotes "d" and "e," which correspond to the new references in the Table, noted above.</p>

Table 4.2-C

CONTROL ROD BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION**	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
<u>Rod Block Monitor</u>				
Upscale (Power Referenced)	D	S/U <sup>hi</sup> , Q	SA	1*
Downscale	D	S/U <sup>hi</sup> , Q	SA	1*
Inoperative	NA	S/U <sup>hi</sup> , Q	NA	1*
<u>APRM</u>				
Flow Biased Upscale	D	S/U <sup>hi</sup> , Q	Q	1
Upscale in Startup	D	S/U <sup>hi</sup> , Q	Q	2, 5
Inoperative	NA	S/U <sup>hi</sup> , Q	NA	1, 2, 5
Downscale	D	S/U <sup>hi</sup> , Q	Q	1
<u>Intermediate Range Monitors</u>				
Detector not full in	NA	S/U <sup>hi</sup> , W	R	2, 5
Upscale	D	S/U <sup>hi</sup> , W	Prior to Startup or Controlled Shutdown	2, 5
Inoperative	NA	S/U <sup>hi</sup> , W	NA	2, 5
Downscale	D	S/U <sup>hi</sup> , W	Prior to Startup or Controlled Shutdown	2, 5
<u>Source Range Monitors</u>				
Detector not full in	NA	S/U <sup>hi</sup> , W	R	2, 5
Upscale	D	S/U <sup>hi</sup> , W	Prior to Startup or Controlled Shutdown	2, 5
Inoperative	NA	S/U <sup>hi</sup> , W	NA	2, 5
Downscale	D	S/U <sup>hi</sup> , W	Prior to Startup or Controlled Shutdown	2, 5
<u>Scram Discharge Volume</u>				
Water Level-High	NA	Q	R	1, 2, 5**
<u>Recirculation Flow</u>				
Upscale	NA	S/U <sup>hi</sup> , Q	SA	1
Inoperative	NA	S/U <sup>hi</sup> , Q	NA	1
Comparator	NA	S/U <sup>hi</sup> , Q	SA	1
<u>Reactor Mode Switch - Shutdown Position</u>				
	NA	R	NA	3, 4

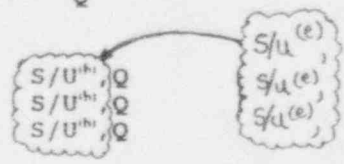
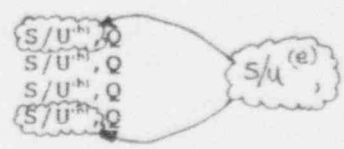
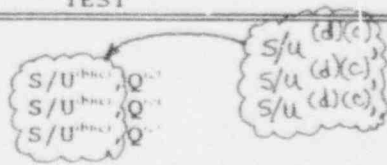


Table 4.2-C (Continued)CONTROL ROD BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTSNOTES

- (a) Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (b) Within 24 hours prior to startup, if not performed within the previous 7 days.
- (c) Includes reactor manual control multiplexing system input.
- \* With THERMAL POWER  $\geq$  30% of RATED THERMAL POWER.
- \*\* With more than one control rod withdrawn. Not applicable to control rods removed or withdrawn per Specification 3.9.A.

- (d) Prior to exceeding 30% RATED THERMAL POWER, if not performed within the previous 7 days.
- (e) Within 24 hours after entering RUN and prior to exceeding 25% RATED THERMAL POWER, if not performed within the previous 7 days.

## SAFETY ASSESSMENT

By letter dated July 12, 1994, IES Utilities Inc. submitted a request for revision of the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). The proposed amendment requests revisions to the Surveillance Requirements (SR) for certain Rod Block Instrument systems. Specifically, the requirement to perform Channel Functional Tests prior to STARTUP for the Rod Block Monitor (RBM), Flow-biased Average Power Range Monitor (APRM) and Recirculation Flow instruments is being revised to allow the SRs to be performed after the Reactor is in the RUN mode, but prior to when each system is assumed to function in the plant safety analysis. Performance of the SRs "prior to STARTUP" requires the extensive use of jumpers and relay blocks. The proposed changes in the SRs ensure that the function will be demonstrated to be OPERABLE prior to when they are required to be OPERABLE, but without the need for the jumpers and relay blocks.

### Assessment:

#### ROD BLOCK MONITOR SYSTEM

For the RBM system, the proposed change to the SR frequency merely revises that requirement to match the existing mode requirement for OPERABILITY in TS Table 3.2-C. As OPERABILITY will be demonstrated prior to entering the operating condition where the system is required to be OPERABLE, the proposed revision to the SR frequency is found to be acceptable.

#### AVERAGE POWER RANGE MONITOR SYSTEM

The proposed change to the SR frequency for the APRM Flow-Biased Rod Block Channel Functional Test to allow the SR to be performed after the reactor enters the RUN mode, but prior to exceeding 25% RTP, will ensure that the system is demonstrated to be OPERABLE prior to reaching a power level where the Safety Limit Minimum Critical Power Ratio (SLMCPR) could be challenged<sup>1,2</sup>.

The purpose of TS-required surveillances is to validate OPERABILITY. In almost all cases, the SR confirms that the equipment is, in fact, OPERABLE and no corrective actions are needed to restore OPERABILITY. In this case, the APRM Rod Blocks in RUN mode utilize circuitry that is common in the APRM system to the STARTUP mode Rod Blocks; the only difference is the circuit cards that compare the incoming APRM signal to the rod block setpoint. However, both setpoint circuit cards (STARTUP and RUN) are calibrated quarterly. Thus, a high probability exists that the RUN mode Rod Blocks are OPERABLE, even though the proposed change allows the SRs for RUN mode

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<sup>1</sup> DAEC Updated Final Safety Analysis Report (UFSAR) Section 15.4.2

<sup>2</sup> DAEC License Amendment #120

to be delayed until after entering the RUN mode, as the SRs for the STARTUP mode Rod Blocks would have been satisfactorily performed and confirmed the OPERABILITY of the APRM circuits common to both modes.

In addition, extensive use of jumpers and relay blocks will be avoided by performing the SR in the RUN mode, thus eliminating the potential for either the inadvertant actuation or disabling of an Engineered Safety Feature (ESF). During the performance of this SR, the reactor mode switch is placed in the RUN position, although the plant is actually in a Cold Shutdown condition. In order to preclude ESF actuations that are not germane to this Channel Functional Test, such as the Main Steamline Isolation Valve Closure with Reactor Pressure  $\geq 850$  psig (mode switch in RUN), jumpers and relay blocks are used in those logic trains. Although the probability is small, the potential does exist for either a jumper or relay block to become dislodged during the test, allowing an inadvertant ESF actuation, or a failure to remove the jumper or relay block at the completion of the SR could occur, thereby disabling the ESF logic until its next scheduled SR is performed. Therefore, the proposed change will enhance safety by eliminating the use of these jumpers and relay blocks.

Consequently, based upon the above, we conclude that the proposed change to the APRM Flow-biased Rod Block SR is acceptable.

#### RECIRCULATION SYSTEM ROD BLOCKS

The proposed change in the SR frequency for the Recirculation system Rod Blocks is the same as those proposed for the APRM system. As the sole purpose of the Recirculation system rod blocks is to ensure that an invalid signal for reactor recirculation flow is not input into the flow-biased APRM rod block circuits, validation of the OPERABILITY of these rod blocks prior to exceeding 25% RTP is not critical, based upon the justification given above that the APRM system Rod Blocks themselves, are not critical below 25% RTP.

Consequently, based upon the above evaluation, we find that the proposed changes in the SR frequency for the Recirculation Flow Rod Blocks to be acceptable.



ENVIRONMENTAL CONSIDERATION

10 CFR Part 51.22(c)(9) identifies certain licensing and regulatory actions which are eligible for categorical exclusion from the requirement to perform an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and, (3) result in an increase in individual or cumulative occupational radiation exposure. IES Utilities Inc. has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Part 51.22(c)(9). Pursuant to 10 CFR Part 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

Basis

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR Part 51.22(c)(9) for the following reasons:

1. As demonstrated in Attachment 1 to this letter, the proposed Amendment does not involve a significant hazards consideration.
2. The proposed Amendment revises the requirement to perform Channel Functional Tests prior to Startup for the Rod Block Monitor (RBM), Flow-biased Average Power Range Monitor (APRM) and Recirculation Flow Rod Block instrumentation. As this instrumentation is not part of those systems that control or monitor plant effluents, there will be no increase in either the types or amounts of effluents that may be released offsite as a result of this proposed change.
3. The proposed Amendment revises the requirement to perform Channel Functional Tests prior to Startup for the RBM, Flow-biased APRM and Recirculation Flow Rod Block instrumentation. As this instrumentation is located in an area of the plant with a low radiation field and surveillances of this instrumentation during Startup are already specified in the TS, there will be no increase in either individual or cumulative occupational exposure as a result of this proposed change.