

PROPOSED CHANGE [RTS-289] 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

3.3-5

SUMMARY OF CHANGES:

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

<u>Page</u>	<u>Description of Changes</u>
3.3-5	Changes the average control rod scram insertion time limit specified in Section 3.3.D.1 for rod position 46 from "0.35" seconds to "0.44" seconds.
3.3-5	Changes the average control rod scram insertion time limit for the three fastest control rods in all groups of four control rods in a 2X2 array specified in Section 3.3.D.2 for rod position 46 from "0.37" seconds to "0.44" seconds.

## LIMITING CONDITION FOR OPERATION

## SURVEILLANCE REQUIREMENT

3. During operation with Limiting Control Rod Patterns, either:
- both RBM channels shall be OPERABLE, or
  - with one RBM channel inoperable, control rod withdrawal shall be blocked within 24 hours, unless OPERABILITY is restored within this time period, or
  - with both RBM channels inoperable, control rod withdrawal shall be blocked until OPERABILITY of at least one channel is restored.

D. Scram Insertion Times

1. The average scram insertion time, based on the deenergization of the scram pilot valve at time zero, of all OPERABLE control rods in the reactor power operation condition shall be no greater than:

<u>Rod Position</u>	<u>Average Scram Insertion Times (Sec)</u>
46	<del>0.95</del> 0.44
38	0.937
26	1.86
06	3.41

2. The average scram insertion times for the three fastest control rods of all groups of four control rods in a 2 x 2 array shall be no greater than:

<u>Rod Position</u>	<u>Average Scram Insertion Times (Sec)</u>
46	<del>0.97</del> 0.44
38	1.01
26	1.97
06	3.62

3. Maximum scram insertion time to rod position 04 of any OPERABLE control rod should not exceed 7.00 seconds.

3. When a Limiting Control Rod Pattern exists and one RBM channel is inoperable, an Instrument Functional Test of the operable RBM channel shall be performed within 24 hours prior to rod withdrawal.

D. Scram Insertion Times

1. After each refueling outage all OPERABLE rods shall be scram time tested from the fully withdrawn position to the drop-out of the reed switch at the rod position required by Specification 3.3.D. The nuclear system pressure shall be above 950 psig (with saturation temperature). This testing shall be completed prior to exceeding 40% power. During all scram time testing below 20% power, the Rod Worth Minimizer shall be OPERABLE or a second licensed operator shall verify that the operator at the reactor console is following the control rod program.

### SAFETY ASSESSMENT

By letter dated January 30, 1996, IES Utilities Inc. submitted a request for revision of the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). The proposed amendment would increase the required average control rod scram insertion time to position 46 from 0.35 seconds to 0.44 seconds for all Operable control rods and increase the required average control rod scram insertion time to position 46 from 0.37 to 0.44 seconds for the three (3) fastest control rods for all groups of four (4) control rods in a 2X2 array.

#### Assessment:

The amount of reactivity inserted at rod position 46 (corresponding to 5% of rod insertion) is small and the time required to insert this amount of reactivity is not explicitly considered in the plant transient analysis. A generic BWR/2-5 study performed on behalf of the BWR Owner's Group has demonstrated that relaxing the 5% rod insertion time requirement had a negligible impact on plant transient performance. We have confirmed that this generic study is applicable to the DAEC. Increasing the allowable average scram insertion time to rod position 46 for all Operable control rods in addition to increasing the allowable average scram insertion time to rod position 46 for the three fastest control rods in any 2X2 array would still demonstrate that the CRD system will perform its intended function.

Consequently, based upon the above, we have concluded that the proposed increases in average control rod scram insertion time for all Operable control rods to rod position 46 to 0.44 seconds and for the three fastest control rods for all groups of four in a 2X2 array to position 46 to 0.44 seconds are acceptable.

## ENVIRONMENTAL CONSIDERATION

10 CFR Section 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 a significant 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 Section 51.22(c)(9). Pursuant to 10 CFR Section 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 Section 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 includes changes which have been evaluated generically for BWR/2-5 plants to have a negligible impact on plant transient performance. This change does not significantly impact any safety analysis or threaten any safety limits. This change will not adversely affect normal or transient plant operation. There will be no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.
3. The proposed amendment includes changes which have been evaluated generically for BWR/2-5 plants to have a negligible impact on plant transient performance. This change does not significantly impact any safety analysis or threaten any safety limits. This change will not adversely affect normal or transient plant operation. There will be no significant increase in either individual or cumulative occupational radiation exposure.

**GE Nuclear Energy**

---

*General Electric Company  
175 Curtner Avenue, San Jose, CA 95125*SIE-96001  
January 4, 1996DRF A12-00038-4  
cc: Matt Brandt, Duane Arnold.  
J. S. Post, GE  
R. E. Kingston, GE

To: Ron Ballou, GE

From: Nader Sadeghi

Subject: Slow Scram Times at 5% Insertion

Duane Arnold requested that GE evaluate the importance of the degradation of 5% insertion time. The purpose of this letter is to respond to this request.

The degradation of the 5% insertion time for the core average does not significantly impact any safety analysis or threaten any safety limits. The 5% insertion time has been relaxed for BWR/2-5s as part of the standard Improved Technical Specification (ITS) upgrade (EAS-56-0889, BWR/2-5 Scram Time Technical Specification, August 1989). The change in the 5% insertion scram time to 0.44 sec was generically assessed for the most limiting transient (load rejection without bypass) to have less than a 0.01 impact on the  $\Delta$ CPR. This impact is considered negligible in view that the operating limit MCPR is based on average scram speed, but faster rods insert more scram reactivity than the slower rods. Meeting the 20% insertion time is more important in its effect on transient performance than meeting the 5% insertion time requirement because the peak total reactivity of the load reject without bypass event occurs sometimes after 0.44 sec. The ODYN Option B type requirements only have the 20% insertion point.

In the event that the original 5% insertion time required by Technical Specifications is not met, the safety limit MCPR would not be exceeded if the insertion time to 5% does not exceed the ITS value of 0.44 sec and the 20% insertion does not exceed its limit.

Please call me if there are any questions on this information.

*N. Sadeghi*N. Sadeghi, Senior Engineer  
(408) 925-1162, M/C 747