

PROPOSED CHANGE RTS-260 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 revising the attached page as indicated.

Affected Page

3.1-11

PAGE

Description of Change

3.1-11

Revise the Bases to reflect more clearly the acceptability of bypassing c.e APRM channel per protection trip system. Specific conditions under which this might occur will no longer be listed. An additional editorial change is being made in the Bases to clarify that one IRM channel in each trip system may be bypassed.

3.1 BASES

The reactor protection system automatically initiates a reactor scram to:

1. Preserve the integrity of the fuel cladding.
2. Preserve the integrity of the reactor coolant system.
3. Minimize the energy which must be absorbed following a loss-of-coolant accident, and prevent inadvertent criticality.

This specification provides the limiting conditions for operation necessary to preserve the ability of the system to perform its intended function even during periods when instrument channels may be out of service because of maintenance. When necessary, one channel may be made inoperable for brief intervals to conduct required functional tests and calibrations.

Allowed outage times have been incorporated consistent with General Electric topical report NEDC-30851-P-A, "Technical Specification Improvement Analysis for BWR Reactor Protection System," dated March, 1988.

The reactor protection system is of the dual channel type (Reference Subsection 7.2 of the Updated FSAR). The system is made up of two independent trip systems, each having three subchannels of tripping devices. One of the three subchannels has inputs from the manual scram push buttons and the reactor mode switch. Each remaining subchannel has an input from at least one independent instrument channel which monitors a critical parameter.

The outputs of the subchannels are combined in a 1 out of 2 logic; i.e., an input signal on either one or both of the subchannels will cause a trip system trip. The outputs of the trip systems are arranged so that a trip on both trip systems is required to produce a reactor scram.

This system meets the intent of IEEE - 279 for Nuclear Power Plant Protection Systems. The system has a reliability greater than that of a 2 out of 3 system and somewhat less than that of a 1 out of 2 system.

The measurement of response time at the specified frequencies provides assurance that the protective, isolation and emergency core cooling functions associated with each channel is completed within the time limit assumed in the accident analysis.

Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements, provided such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either: 1) in-place on-site or off-site test measurements, or 2) utilizing replacement sensors with certified response times.

With the exception of the Average Power Range Monitor (APRM) channels, the Intermediate Range Monitor (IRM) channels, the Main Steam Isolation Valve closure and the Turbine Stop Valve closure, each subchannel has one instrument channel. When the minimum condition for operation on the number of operable instrument channels per untripped protection trip system is met or if it cannot be met and the affected protection trip system is placed in a tripped condition, the effectiveness of the protection system is preserved.

Three APRM instrument channels are provided for each protection trip system. APRM's A and E operate contacts in one subchannel and APRM's C and F operate contacts in the other subchannel. APRM's B, D and F are arranged similarly in the other protection trip system. Each protection trip system has one more APRM than is necessary to meet the minimum number required per channel. This allows the bypassing of one APRM per protection trip system for maintenance testing or calibration. Additional IRM channels have also been provided to allow for bypassing of one such channel. The bases for the scram setting for the IRM, APRM, high reactor pressure, reactor low water level, MSIV closure, generator load rejection and turbine stop valve closure are discussed in Specifications 2.1 and 2.2.

in each trip system

ENVIRONMENTAL CONSIDERATION

10 CFR 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. Iowa Electric Light and Power has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 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 51.22(c)(9) for the following reasons:

1. As demonstrated in Attachment 1, the proposed Amendment does not involve a significant hazards consideration.
2. The proposed Amendment includes changes which are clarifications of existing TS requirements. No changes in either system design or operational strategies will be made as a result of the Amendment; thus, there will be no increase in either the types or amounts of effluents that may be released offsite.
3. The proposed Amendment includes changes which are clarifications of existing TS requirements. No changes in either system design or operational strategies will be made as a result of the Amendment; thus, there will be no significant increase in either individual or cumulative occupational exposure.

SAFETY ASSESSMENTIntroduction

By letter dated December 7, 1993, Iowa Electric Light and Power Company (IELP) submitted a request for revision of the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC). The proposed changes clarify the existing TS Bases regarding the acceptability of bypassing APRMs and make an editorial change to the IRM bypass description for consistency.

Assessment

The DAEC was designed to have a dual channel type Reactor Protection System (RPS), which is made up of two independent trip systems. These trip systems are further divided into subchannels, the outputs of which are combined to provide a 1-out-of-2 twice scram logic. The methods by which APRM inputs are provided to these subchannels essentially create an installed spare for each trip system. This installed spare thus provides the flexibility to allow bypassing one APRM channel per trip system while still maintaining the minimum number required per TS.

This design is supported by DAEC design documents, the UFSAR, and the TS Bases. The wording in the TS Bases, however, could lead to the conclusion that bypassing APRMs is only acceptable under the specific conditions which are listed. The proposed change deletes the list of specific conditions and thus clarifies the acceptability of bypassing one APRM channel per trip system provided the minimum number of operable channels required by the TS are maintained.

An editorial change is being made to the TS Bases regarding the bypassing of IRM channels. The Bases statement is being revised to clarify that one IRM channel in each trip system may be bypassed.

Based on the above information, we have concluded that the proposed changes to the DAEC TS are acceptable.