



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 100 TO PROVISIONAL

OPERATING LICENSE DPR-19 AND

AMENDMENT NO. 96 TO FACILITY OPERATING LICENSE DPR-25

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-237 AND 50-249

1.0 INTRODUCTION

By application dated April 25, 1988, Commonwealth Edison Company (CECo or the licensee) submitted a request to amend to the Technical Specifications for Provisional Operating License No. DPR-19 and Facility Operating License DPR-25 for the Dresden Nuclear Power Station, Units 2 and 3. The proposed amendment which would eliminate the Average Power Range Monitor (APRM) downscale scram requirement (also referred to as the APRM/IRM companion scram) was submitted as part of the long term corrective action resulting from an event which occurred at Dresden Unit 2 and was reported in LER 87-022. The removal of the APRM downscale scram also eliminates the IRM scram which occurs in the RUN Mode simultaneous with the APRMs downscale.

Two additional unrelated Technical Specification changes to the Reactor Protection System Instrumentation Requirements Table would result in the elimination of the bypass permissive in the Main Steam Line High Radiation scram and the addition of the bypass permissive on the Turbine Control-Loss of Control Oil Pressure scram. The amendment also provides clarification and the correction of a typographical error.

2.0 DISCUSSIONS

a) APRM Downscale Scram

The Dresden Technical Specifications Table 3.1.1, Reactor Protection System (scram) Instrument Requirements, requires that the IRM channels be capable of performing a scram function while the reactor is in the RUN Mode. Note 5 indicates that this scram function may be bypassed when the APRM's are on scale and the reactor mode switch is in the RUN position. The proposed change will delete this requirement and Note 5.

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Table 3.1.1 requires that at Neutron Flux APRM Downscale condition trip the reactor while the reactor is in the RUN Mode. The proposed change will delete this requirement and corresponding Note 13.

Table 3.1.1 recognizes that the APRM High Flux (15% scram) is not operative in the RUN Mode. The proposed change would clarify this requirement on the table and eliminate the need for Note 14.

Table 4.1.1 requires a functional test for the APRM Downscale scram. The proposed change will delete this requirement consistent with the changes made to Table 3.1.1.

The licensee stated that two problems exist with the Technical Specifications in Table 3.1.1. The first problem involves the requirement for an APRM downscale scram. The second problem involves the bypassing of the IRM channels when the reactor mode switch is in the RUN Position.

The APRM Downscale Scram functions exist in several early BWR plants including Dresden Units 2 and 3, but this function was deleted in the later BWR plants and the requirement removed from the standard BWR Technical Specifications (NUREG-0123, Revision 3). The licensee has stated that the only function performed by the APRM Downscale Scram is during the plant startup or shutdown. This scram function provides protection against operator error if the reactor mode switch were improperly switched. During a normal plant startup, the mode switch is usually placed in RUN position when the power is above 5%. If an operator were to prematurely place the mode switch in the RUN position, the APRM will be downscale and the IRM scram function will not be bypassed (the IRM Scram circuit will be bypassed when the mode switch is in RUN position and the APRM's are not downscale). If this should happen, all safety concerns are addressed without reliance on the APRM downscale scram function. The Control Rod Drop Accident is prevented by the APRM scram at the 120% thermal power setpoint, and the Rod Withdrawal Error is prevented by the APRM Downscale Rod Block system. Prematurely placing the mode switch in the RUN mode is also protected by the main steam isolation valve (MSIV) closure scram function (due to low steamline pressure when the reactor mode switch is placed in the RUN position). Another example of operator error can occur during power descent if the operator delays changing the reactor mode switch from the RUN mode to the STARTUP mode, thus bypassing the IRM's for a longer period of time and to a lower power level. The consequences of this error are no different than those described above for power ascension. The Control Rod Drop Accident and the Rod Withdrawal Error are protected by the APRM scram and the Rod Block system.

#### b) Main Steam Line High Radiation Trip

Table 3.1.1 of the Technical Specifications contains a note permitting this scram to be bypassed when the reactor pressure is less than 600 psig. This note was erroneously incorporated into the original Unit 3 Technical Specifications and then into the Unit 2 Technical Specifications with Amendment No. 9 in March 1971 in an effort to make the two Technical Specifications consistent. This change would eliminate this note from the Technical Specifications which is consistent with both the Quad Cities Technical Specifications and the BWR Standard Technical Specifications as well as the Dresden units actual plant design and operation.

c) Turbine Control-Loss of Control Oil Pressure Trip

Table 3.1.1 of the Technical Specifications does not allow the bypassing of the turbine control on loss of control oil pressure when the first stage turbine pressure is less than that which corresponds to 45% of rated steam flow. This bypass permissive was an original design feature which is identical to the one allowed for generator load rejection. The scram function of this bypass permissive is similar to that of the generator load rejection scram and in both cases the scram is anticipatory to the fast closure of the turbine control valves. The scram function was added to the Technical Specifications in June 1971 with Amendment 11 to DPR-19, the Provisional Operating License for Dresden Unit 2, and Amendment 3 to DPR-25, the Facility Operating License for Dresden Unit 3. The bypass permissive, however, was omitted from these amendments due to an oversight. The addition of this bypass permissive is also consistent with both the Quad Cities and the BWR Standard Technical Specifications.

3.0 EVALUATION

a) APRM Downscale Scram

The staff has reviewed the proposed Technical Specification changes associated with and the justification for removal of APRM downscale scram. The proposed changes clarify the intent of the original specification by clearly defining the scram functions needed to be operable in each mode of operation and do not involve any modification of the reactor protection system wiring or circuitry. The licensee is taking credit for the APRM scram and the APRM downscale trip in the Control Rod Block actuation circuitry. Since both the APRM scram and the Control Rod Block actuation circuitries are required by the plant Technical Specifications for operability and surveillance testing, there is reasonable assurance that those circuitries will perform their protective functions when needed. Furthermore, evaluations by General Electric (Reference 1) of premature placing of the reactor mode switch in the Run Mode during all types of plant startups and the delay of placing the reactor mode switch in the Startup Mode have shown that all safety concerns are addressed without reliance on the APRM downscale scram function. The staff has also verified that the standard BWR Technical Specifications and all later plants do not require the APRM Downscale Scram nor the IRM Scram when the reactor is in RUN Mode. Based on its review, the staff finds that the proposed changes are acceptable.

b) Main Steam Line High Radiation Trip

The staff has reviewed the proposed Technical Specification change related to the elimination of the Table 3.1.1 footnote permitting the bypassing of this trip function when the reactor pressure is less than 600 psig. Since the elimination of this provision, which was erroneously incorporated into the Dresden Technical Specifications, is consistent with the original plant design, FSAR requirements and with the Standard Technical Specifications, the staff has determined this proposed change is acceptable.

c) Turbine Control-Loss of Control Oil Pressure Trip

The staff has reviewed the proposed Technical Specification change related to the reinsertion of a Table 3.1.1 footnote permitting the bypassing of this trip function when the first stage turbine pressure is less than that which corresponds to 45% of rated steam flow. Since this bypass permissive, which was erroneously omitted, was part of the original plant design and is consistent with the Quad Cities and Standard Technical Specifications, the staff has determined this change is acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted areas as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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 assessment need be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 REFERENCES

1. Letter from J.A. Miller, Services Project Manager, General Electric Corporation to E.D. Eenigenburg, Station Manager, Dresden Nuclear Station, dated August 26, 1987.

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Dated: August 24, 1988