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PROPOSED RULE PR 50
45 FR 75536

January 13, 1981

Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Docketing and Service Branch

Subject: NRC Proposed Rule Regarding Fracture Toughness Requirements For Nuclear Power Reactors (45 FR 75536 November 14, 1980)

Dear Sir:

Attached please find Commonwealth Edison's comments concerning the subject rulemaking.

The proposed rule is generally acceptable and provides some welcome changes, notably in permitting critical core operation at a lower temperature during BWR startup operations.

One requirement, however, does not appear to have a sound technical basis and could result in extended outages for BWR units following refueling. This requirement, set forth in the proposed Appendix G paragraph IV.A.2, sets RT_{NDT} + 150°F for pressures above 20 percent of the preservice system hydrostatic test pressure. The 150°F requirement appears excessive when compared to paragraph IV.A.4 which permits the system hydrostatic pressure test to be performed at a minimum of RT_{NDT} + 60°F when no fuel is in the reactor. We request that the NRC reevaluate and provide a basis for the 150°F margin requirement for pressures above 20 percent of the preservice system hydrostatic test pressure.

Specific comments are included in the attachment. We appreciate having been given the opportunity to comment.

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Nuclear Licensing

Acknowledged by card 1/16/81

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Commonwealth Edison's Comments Regarding Fracture Toughness Requirements For Nuclear Power Reactors
(45 FR 75536 November 14, 1980)

The proposed Appendix G in paragraph IV.A.2. requires when the core is not critical and the pressure exceeds 20 percent of the preservice system hydrostatic test pressure, that "the temperature of the stressed regions of nozzles flanges and other structural discontinuities shall be at least 150°F above (83°C above) the reference temperatures of the material in those regions". Commonwealth Edison does not believe there is a technical basis to require RT_{NDT} + 150°F for pressures above 20 percent of the preservice system hydrostatic test pressure. The 150°F requirement appears excessive when compared to paragraph IV.A.4. which permits the system hydrostatic pressure test to be performed at a minimum temperature of RT_{NDT} + 60°F when no fuel is in the reactor. We request that the NRC reevaluate and provide a basis for the 150°F margin requirement for pressures above 20 percent of the reservice system hydrostatic test pressure.

A preliminary evaluation of the effect of the 150°F margin above RT NDT indicates that a hardship would result in the accomplishment of the system leakage and hydrostatic tests for Dresden and Quad Cities Stations. The Technical Specifications identify the vertical electroslag welds with an RT_{NDT} of 40°F to be the limiting material in the flange region. The proposed Appendix G would require a temperature of 190°F for the leakage and hydrostatic tests. This temperature is difficult to reach using pumps for heating, with the temperature rise above approximately 150°F being 30°F/Hour maximum. Although Dresden has the capability of using auxilliary steam for heating via the unloading or shutdown cooling heat exchangers, Quad Cities does not and is limited to using pump heat.

Another concern with the 150°F margin above RT NDT is that the system leakage and hydrostatic tests would be performed at a temperature closely approaching 212°F. The Technical Specifications require that primary containment integrity be maintained when the reactor water temperature is above 212°F. The proximity between the required 190°F metal temperature and the 212°F limit on water temperature could lead to station decisions to seal the drywell prior to pressure tests. This is not normally done and combined with the very slow heat up rate above 150°F could add one or more critical path days to an outage.

The current Technical Specification temperature requirement for the hydrostatic test is 149^{0}F based on an ASME Appendix G analysis of the beltline region. We consider the present Technical Specifications to provide adequate margin against nonductile fracture of the Dresden and Quad Cities reactor vessels.

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