



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 61 TO FACILITY OPERATING LICENSE NO. NPF-37,
AMENDMENT NO. 61 TO FACILITY OPERATING LICENSE NO. NPF-66,
AMENDMENT NO. 49 TO FACILITY OPERATING LICENSE NO. NPF-72,
AND AMENDMENT NO. 49 TO FACILITY OPERATING LICENSE NO. NPF-77
COMMONWEALTH EDISON COMPANY
BYRON STATION, UNIT NOS. 1 AND 2
BRAIDWOOD STATION, UNIT NOS. 1 AND 2
DOCKET NOS. STN 50-454, STN 50-455, STN 50-456 AND STN 50-457

1.0 INTRODUCTION

On March 10, 1994, Commonwealth Edison Company (CECo, the licensee) requested by telephone that the Commission exercise its discretion not to enforce compliance with the Action requirements of Technical Specification (TS) 3.7.1.1 for Byron Station, Units 1 and 2, and Braidwood Station, Unit 2. This request was made after the licensee was informed by its contractor that the as-left tolerances on the lift setpoints of certain main steam safety valves (MSSVs) were greater than the $\pm 1\%$ maximum specified by the limiting condition for operation (LCO) of TS 3.7.1.1. The tolerances on the MSSVs at Braidwood, Unit 1 were also found to be greater than $\pm 1\%$; however, the limits of TS 3.7.1.1 did not apply since Braidwood, Unit 1 was in a refueling outage at the time the condition was discovered. TS Action requirement 3.7.1.1.a would have required that the tolerances be reset to within $\pm 1\%$ in the next 4 hours, or that the plants be in at least HOT STANDBY within the next 6 hours and cold shutdown within the following 30 hours. On the basis of information presented by the licensee, the NRC concluded that continued operation of the plants until the licensee could submit an emergency TS amendment involved minimal or no safety impact, and verbally granted enforcement discretion during the March 10 telephone call. A formal Notice of Enforcement Discretion (NOED) was requested in the licensee's submittal of March 11, 1994. On March 15, 1994, the NRC formally granted the NOED which was to be effective until approval of an emergency TS amendment which was to be submitted no later than March 21, 1994.

By letter dated March 21, 1994, as supplemented on March 24, 1994, the licensee submitted its request for a one-time only Emergency TS amendment to the operating licenses of Byron, Units 1 and 2, and Braidwood, Units 1 and 2. The first of the proposed changes would add a footnote to TS 3.7.1.1,

Table 3.7-2, to allow a tolerance of $\pm 3\%$ for the MSSV lift setpoints to be acceptable until May 9, 1994, by which time the tolerances would be reset to $\pm 1\%$.

A second change would be made to Braidwood TS Surveillance Requirement (SR) 4.7.1.1, by adding a note to relieve Braidwood, Unit 1 of compliance with TS 4.0.4 until it initially enters Operational Mode 2. This change was requested because TS 4.0.4 does not allow entry into an Operational Mode if the surveillance requirements associated with the LCO of TS 3/4.7.1 are not met. However, the surveillance requires that the MSSV setpoints be set at the temperature and pressure corresponding to Operational Mode 3. The change would therefore allow Braidwood, Unit 1 to proceed from its refueling outage to Mode 3 in order to reset the MSSV lift setpoints, and would be applicable only for the upcoming fuel cycle (Cycle 5).

2.0 EVALUATION

The MSSVs at Byron and Braidwood were designed and manufactured as Class II components in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, 1971 edition. Testing of the valves is performed in accordance with Section XI of the ASME code. Operability of the MSSVs ensures that secondary system pressure is limited to 110% of its design pressure (1200 psia for Byron and Braidwood) during a turbine trip from 100% rated thermal power with no available path to the condenser (no steam dump capability). This represents the most severe anticipated operational transient. An increase on the positive side of the setpoint tolerance would potentially result in the MSSV lifting at a higher pressure, increasing the maximum pressure in the secondary system.

In its submittals of March 21, 1994, and March 24, 1994, CECO assessed the safety impact of plant operation with the higher setpoint tolerance. Specifically, the licensee examined the effect of the increased MSSV setpoint tolerance on the existing licensing basis events analyses as presented in the Updated Final Safety Analysis Report (UFSAR), and concluded that the analyses remain valid with the exception of the loss-of-external load/turbine trip event. The licensee re-analyzed this event assuming the relaxed tolerance, and determined that all applicable acceptance criteria would continue to be met and the UFSAR conclusions would remain valid. CECO concluded that the increased as-found setpoint tolerance has no significant impact on any system, operating mode, or accident analysis.

The licensee's findings are consistent with those of other similarly designed pressurized water reactor plants which have been granted relaxed setpoint tolerances for their MSSVs. These include Seabrook, V.C. Summer, and Fort Calhoun stations. Additionally, Section XI of the 1989 edition of the ASME Code requires that MSSVs be tested in accordance with ASME/ANSI OM-1987, Part I, which permits the tested setpoint pressure to exceed the nominal value by up to 3% before a test failure is declared. The proposed increase in the tolerance is therefore also consistent with recent editions of the ASME Code.

On the basis that the setpoints are within $\pm 3\%$, which has been granted to other plants and the relatively short duration of the proposed change (approximately one month), the staff is satisfied that the MSSVs will continue to accomplish their function with a $\pm 3\%$ tolerance, and therefore finds the proposed temporary revisions to the TS to be acceptable. It should be noted that any analyses submitted in support of future amendment requests for a permanent change of the setpoint tolerance are subject to further staff review.

3.0 EXIGENT CIRCUMSTANCES

On March 9, 1994, the Braidwood System Engineering Department was informed by the maintenance contractor for the MSSVs, Furmanite Company, that an improper value for the mean seat area was used by Trevitest, the valve vendor (a wholly-owned subsidiary of Furmanite) in calculating the lift setpoints. Additional communications between the Furmanite Company and the licensee indicated that the problem also existed at both Byron units. Subsequent calculations by the licensee of the as-left setpoints using a corrected mean seat area revealed that the tolerances on a total of 16 valves (out of 20) for Byron, Unit 1, 19 valves for Byron, Unit 2, and 17 valves each for both Braidwood units were outside of the $\pm 1\%$ tolerance specified in TS 3.7.1.1, but were within $\pm 3\%$.

The NRC concluded there was minimal or no safety impact from the tolerance settings of the MSSVs and granted enforcement discretion from the Action requirements associated TS 3.7.1.1 for Byron, Units 1 and 2, and Braidwood, Unit 2, in order to avoid a forced shutdown of these units. The duration of enforcement discretion was for the period from March 10, 1994, until a TS amendment could be approved for both units of Byron and Braidwood. Subsequently, the licensee's March 21, 1994, submittal, requested that the license amendment be approved prior to April 17, 1994, to allow for the startup of Braidwood, Unit 1 from its refueling outage. Due to the provisions of TS 4.0.4., delayed issuance of the amendment would have prevented Braidwood, Unit 1 from restarting. The circumstances leading to this request for an exigent TS amendment could not have been avoided since the licensee was only recently made aware by the vendor of the need to reset the lift setpoint tolerances of the MSSVs. The situation was not created by a failure of the licensee to submit a timely application for a TS amendment.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed TS change (permitting continued activities at all four units until the MSSVs can be reset) does not significantly increase the probability of an accident previously evaluated. Analysis performed for MSSV setpoints of $\pm 3\%$ showed that all of the applicable loss-of-coolant accident (LOCA) and non-LOCA design basis criteria remain valid both for the transients evaluated and the single event analyzed, Loss of External Load/Turbine Trip. The peak primary and secondary pressures remain below 110% of design at all times. The departure from nucleate boiling ratio (DNBR) and peak clad temperature (PCT) values remain within the specified limits of the licensing basis. The higher valve setpoint tolerance may increase the steam release from a ruptured steam generator above the updated final safety analysis report (UFSAR) by approximately 2%, but the steam generator tube rupture (SGTR) analysis indicates that the calculated break flow is still less than the value reported in the UFSAR. Therefore the slight increase in the steam release is offset by the decrease in the break flow such that the offsite radiation doses are less than those reported in the UFSAR.

The proposed TS change does not create the possibility of a new or different kind of accident previously evaluated since no new system configurations are introduced, and no equipment is being operated in a new or different manner than that previously analyzed. No new or different failure modes are being created.

The proposed TS change does not involve a significant reduction in a margin of safety. The MSSV setpoints will not adversely affect the operation of the reactor protection system, any of the protection setpoints, or any other device required for accident mitigation. The LOCA and non-LOCA conclusions in the UFSAR remain valid. The DNBR design basis, primary and secondary pressure limits, and dose release limits continue to be met. PCTs remain well below the limits specified in 10 CFR 50.46.

Therefore, in accordance with 10 CFR 50.92, the Commission has made a final determination that no significant hazards consideration is involved.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Illinois State official was notified of the proposed issuance of the amendments. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve 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 the amendments involve no significant hazards consideration, and there has been no

public comment on such finding (59 FR 14685). Accordingly, the amendments meet 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 need be prepared in connection with the issuance of the amendments.

7.0 CONCLUSION

The Commission 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; (2) such activities will be conducted in compliance with the Commission's regulations; and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

In addition, the Commission has found that exigent circumstances exist, in that the licensee and the Commission must act quickly and that time does not permit the Commission to publish a Federal Register Notice allowing 30 days for prior public comment.

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Date: April 18, 1994