



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20565-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 126 TO FACILITY OPERATING LICENSE NO. DPR-19  
AND AMENDMENT NO. 120 TO FACILITY OPERATING LICENSE NO. DPR-25  
COMMONWEALTH EDISON COMPANY  
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3  
DOCKET NOS. 50-237 AND 50-249

1.0 INTRODUCTION

By letter dated March 26, 1993, Commonwealth Edison Company (CECo, the licensee) requested an amendment to Facility Operating License Nos. DPR-19 and DPR-25 for Dresden Nuclear Power Station, Units 2 and 3. The proposed amendment would modify the trip level settings for the High Pressure Core Injection (HPCI) and Isolation Condenser steamline steam flow. Also, the proposed change would change the Emergency Core Cooling System (ECCS) Low-Low Water Level initiation trip level setting tolerance. All changes will be made in the safety conservative direction.

2.0 EVALUATION

2.1 HPCI Steamline Steam Flow HIGH

Primary containment isolation instrumentation is provided for the steam supply piping to the HPCI turbine. Isolation would occur if a steam flow exceeds 300%. Three hundred percent steam flow is recommended by General Electric (GE) to be the acceptable analytical limit for the detection of steamline breaks. GE in Service Information Letter No. 475 (SIL-475) alerted licensees to an inconsistency in the calculational methodology utilized in the determination of the original setpoint. Dresden performed tests recommended in GE SIL-475. The results of testing and additional calculations determined new setpoint values for 300% steam flow. As a result, the licensee proposes to change the TS to remove the 150 inches of water differential listed as the trip setting in Table 3.2.1 of the TS for the High Flow HPCI Steamline. The licensee proposes to replace it with the value of "less than or equal to 300% rated steam flow." This number and nomenclature is consistent with Boiling Water Reactor (BWR) Standard Technical Specification (STS) (NUREG-0123, Revision 4). The current TS value (150 inches) meet the design requirement and provides an adequate margin of safety; however, the revised values used to set the HPCI Steamline Break Instrumentation ensure the reactors are at a minimum point of susceptibility to spurious trips while still maintaining margin to the 300% analytical limit. The field settings for the HPCI trip setpoint will be based on site-specific test data and calculation results. The site will administratively control the plant field settings in the

appropriate site surveillance procedures to ensure the TS limit of 300% rated steam flow are maintained.

Based on the above evaluation, the staff finds the setpoint change is in the safety conservative direction and will be listed in the TS in accordance with the BWR STS. Therefore, the staff finds the proposed change acceptable.

## 2.2 Isolation Condenser Steamline Flow HIGH

The isolation condenser provides reactor core cooling in the event that the reactor becomes isolated from the main condenser. Primary containment isolation is provided to close isolation valves in the event high steam flow is detected. NRC Information Notice (IN) 82-16 informed licensees of potential problems concerning incorrect high steam flow isolation setpoints found on HPCI and reactor core isolation cooling (RCIC) systems. The setpoints are typically established at 300% of measured rated steam flow. Based on IN 82-16, CECO reevaluated the high steam flow isolation setpoint. CECO's calculations and tests indicated that the current TS limit of 20 psi (equivalent to 554.6 inches of water) differential is equivalent to 336% steam flow. Therefore, the licensee proposes to change the TS isolation setpoints to read less than or equal to 300% generated steam flow. Similar to the HPCI high steam flow isolation setpoint, the field setting for the setpoint will be based on specific test data and calculations. The site will administratively control the plant field settings in the appropriate site surveillance procedures to ensure the TS limit of 300% rated steam flow.

The current TS limit of 554.6 inches water differential is greater than 300% steam flow; however, Dresden Instrument Surveillance DIS-1300-2 requires a field setting of  $400 \pm 5$  inches water differential which is less than 300% steam flow, this valve has been maintained as the trip level setting at Dresden Station since 1973.

Based on the above calculation, the staff finds the setpoint change is in the safety conservative direction. Therefore, the staff finds the proposed change to the TS acceptable.

## 2.3 Reactor Low-Low Water Level ECCS Actuation Trip Level Setting Tolerance

The ECCS Reactor Low-Low Water Level Actuation trip setting function is to initiate ECCS when reactor water level is less than or equal to 84 inches above the top of active fuel. This trip level setting was low enough to prevent spurious operation, but high enough to initiate ECCS and diesel generator operation to maintain the plant within the requirements of 10 CFR 50.46. The current TS instrument setpoint for the Low-Low Water Level is set at 84 inches above top of active fuel with a band of plus 4 inches to minus 0 inches. This tolerance band requires that the instrument be set less conservatively to maintain the trip range of 88 inches to 84 inches above the top of active fuel. In a number of instances, the instrument has activated at a point higher than 88 inches. This would result in the instrument being out of the tolerance range and having to declare the instrument inoperable and

outside the TS tolerance range, even though the instrument operated in a more conservative manner. In accordance with 10 CFR 50.72, this would have to be reported to the NRC. The proposed change to the TS would remove the tolerance band from the TS requiring the setpoint of the instrumentation to trip at less than or equal to 84 inches ATF. Similar to the HPCI and Isolation Condenser setpoint discussed above, the new Low-Low Reactor Water Level setpoint will be based on field settings obtained from site-specific test data and calculation (i.e. approximately 90" ATF). This setting is more conservative than the existing maximum allowable setting of 88" ATF, but at a level to avoid spurious ECCS and diesel generator starts.

Based on the above evaluation, the staff finds the proposed change to the TS to be in a more safety conservation direction. Therefore, the staff finds the proposed change to the TS to be acceptable.

### 3.0 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.

### 4.0 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 10002). 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.

### 5.0 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.

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