

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NO. 12 TO FACILITY OPERATING LICENSE NO. NPF-37, AMENDMENT NO. 12 TO FACILITY OPERATING LICENSE NO. NPF-66 AND AMENDMENT NO. 2 TO FACILITY OPERATING LICENSE NO. NPF-72 COMMONWEALTH EDISON COMPANY BYRON STATION, UNITS 1 AND 2 BRAIDWOOD STATION, UNITS 1 AND 2 DOCKET NOS. STN 50-454 STN-50-455, STN 50-456 AND STN 50-457

1.0 INTRODUCTION

By letter dated September 3, 1987, Commonwealth Edison (the licensee) submitted a request for revision of the Technical Specification, for Byron Station, Unit 2, and Braidwood Station, Units 1 and 2. The proposed revision would allow for a one time extension of the interval for performing certain 18-month instrument surveillances until the first refueling outages for Byron 2 and Braidwood 1 and 2. Byron Station, Unit 1 is not affected by the requested changes, since it has completed its first refueling outage. For Byron 2, the time period from the first pre-operational surveillance to the end of the first refueling outage is anticipated to be 32 months. Thus, the licensee had to justify an extension to 32 months on certain instrument surveillances. For consistency in the Technical Specifications, 32 months was requested for all the instrument surveillances on all three units.

2.0 EVALUATION

The proposed Technical Specification changes include instrumentation from the Reactor Trip System, Engineered Safety Features Actuation System, Radiation Monitoring, Remote Shutdown Monitoring, Accident Monitoring, Radioactive Liquid Effluent Monitoring, Radioactive Gaseous Effluent Monitoring, Power Distribution Limits, Reactor Coolant System and the Emergency Core Cooling System. Not all of the instrumentation in these systems are included in the proposed change. The September 3, 1987 submittal denotes the specific instrumentation that is included.

The current Technical Specifications are consistent with the Standard Technical Specifications in that many surveillance tests are at 18-month intervals which is the maximum anticipated interval between refueling. Some variation is allowed by Specification 4.0.2 which permits a 25% extension up to a maximum of 3.25 x 18 months for three consecutive surveillances.

During normal plant startup testing and required low power operation, the fuel burnup rate is much lower than full power operation. The licensee noted that the first fuel cycle for Byron Unit 1 was 24 months. For Byron Unit 1, the licensee took a six week surveillance outage and met the Technical Specification 18-month surveillance requirements. The licensee is requesting this amendment to prevent extended surveillance outages for the other three units' first fuel cycle. The licensee has stated in their submittal that due to the limitations on the number of people and testing equipment that can physically be used to work on an instrument rack at one time and since some surveillance must be performed sequentially, up to a 21-day outage is required using three work shifts a day.

The licensee safety evaluation notes that although the 18-month channel calibration will be extended, the shiftly, monthly, and quarterly testing will continue. These functional tests will detect degradation or inoperability of the channels and include the analog/digital channel operational test, channel check, source and trip actuating device operational test. The results of these tests are compared with the operational allowables (which are more conservative than the Technical Specifications) and if the allowables are exceeded a work request is issued and the channel is brought back to specifications. These checks will not detect drift of the sensor instrument. Any channels that are out of the Technical Specification allowables will put the plant into the appropriate action statement.

As part of requested surveillance changes at Byron Station, Unit 1, the licensee trended instrument drift for approximately two years. This information was compared to the rack drift allowances outlined in the Westinghouse Statistical Setpoint Study. The staff has previously reviewed and accepted the Westinghouse setpoint methodology. The Byron study demonstrated that over 99 percent of all data taken remained within the drift tolerances of the Westinghouse Statistical Setpoint Study. Since the normal quarterly surveillances do not include the process sensors, sensors for the steam generator pressure, narrow and wide range steam generator level, pressurizer level and pressure, auxiliary feedwater suction pressure, RWST level. containment pressure and reactor coolant system loop flow were included to get drift information on the sensors. Of the channels found outside the allowables during this two year surveillance, it was noted that all turbine trip emergency trip header pressure channels were outside the limits and therefore Byron 2 and the Braidwood Stations are not requesting surveillance extensions for those channels. The remaining sensors demonstrated minimal drift that the trending showed to be random in nature.

The licensee has demonstrated that, for the instrumentation channels requested, the magnitude of undetected instrument drift will be small and have no effect on the probability of previously evaluated accidents. The Byron 1 study is applicable to Byron 2 and Braidwood 1 and 2. Deferral of the 18-month channel calibration to 32 months may increase the potential for undetected instrument drift but the functional tests will continue to be performed and will detect instrument failures.

The instrumentation channels have been calibrated at different times during startup testing such that for Byron 2 over half of instruments normal 18-month surveillance due date is within six months of the scheduled refueling outage.

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The staff has concluded that delaying these instrument surveillances will not provide significant reduction in the accuracy or availability of the instrument channels. 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 regulation. The staff finds the requested one-time increase from 18 months to 32 months in the cycle one refueling surveillance interval for the instrumentation listed in the submittal to be acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR 20. The staff has determined that these amendments involve (i) no significant harards, (ii) no significant increase in the amounts, and (iii) 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. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 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 these amendments.

4.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be

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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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: November 25, 1987

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