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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 146

TO PROVISIONAL OPERATING LICENSE NO. DPR-16

GPU NUCLEAR CORPORATION AND
JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION

By an application for amendment dated December 17, 1990, as supplemented January 7, 1991, GPU Nuclear Corporation (the licensee) requested a revision of the Technical Specifications (TS) to Provisional Operating License DPR-16 for Oyster Creek Nuclear Generating Station. The proposed change extends the channel calibration surveillance interval from 18 months to at least every 24 months for the equipment listed in Table 4.13-1, Item 1: Primary and Safety Valve Position Indicator (Primary Detector), Relief and Safety Valve Position Indicator (Backup Indication), and the Relief Valve Position Indicator (Common Header Temperature Element). The proposed surveillance interval is intended to support a 24 month refueling cycle at Oyster Creek Nuclear Generating Station.

2.0 EVALUATION

Technical Specification Table 4.13-1, Item 1, requires that a channel calibration be performed once per 18 months. The calibration surveillance checks the 21 instrument channels of the Primary Electromatic Relief Valve (EMRV) and Code Safety Acoustic Valve Monitoring System, including signal conditioner output, pre-amp voltage, channel sensitivity, and alarm setpoints. This surveillance also requires the replacement of the 23 backup indication thermocouples (21 for valve position and 2 for common header temperature) with new, calibrated units. The purpose of the 18-month calibration surveillance is to assure system availability by calibration of system components and the detection of failed components.

The EMRV and Safety Valve Acoustic Monitoring System senses an open or leaking relief/safety valve by utilizing an accelerometer to detect flow induced vibrations in the relief valve piping. Thermocouples are also installed on each safety and relief valve tail piece and common header as a secondary method of valve position indication.

The indicators provide a closed/opened status indication and, as stated by the licensee, are not required by operators to perform any specific manual actions

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other than to close an open electromatic relief valve (EMRV). The accident monitoring instrumentation for primary (EMRV) and safety valve position indication are Regulatory Guide 1.97 Type D parameters (providing indication of system actuation). Based on Oyster Creek Topical Report #28 Rev. 1, the licensee designated the EMRV's as RG 1.97 category 2 and the safety valves as RG 1.97 category 3.

In addition to the 18-month calibration, the Acoustic Valve Monitoring System (VMS) also undergoes a monthly surveillance check that verifies the operability of alarms, indications, channel sensitivity, pre-amp voltages, and accelerometer resonances. The monthly surveillance check also verifies the operability of the thermocouple position indicators by confirming that temperature readings are available and by comparing the average relief and safety valve temperature for each steam header and by comparing the temperature readings of the tail piece thermocouples.

The licensee evaluated the surveillance history for the 18-month outage calibration and monthly surveillances. The results, as stated by the licensee, did not indicate any significant problems. A licensee review of all 18-month calibration surveillances performed to date found failures due to cable splice defects, preamplifier degradation, hardline cable failure and preamplifier bias voltage drift diagnostic alarms. These problems (8 total) were corrected with no further discrepancies noted for the 18 month surveillances. The evaluation of 18 monthly surveillance checks performed by the licensee, showed that 10 of the 18 tests required minor repairs or adjustments.

The licensee indicated that the monthly surveillance checks have sufficient testing overlap with the 18-month calibration surveillances such that the failures identified during the 18-month calibration surveillance would also have been detected during the monthly surveillance checks. This overlap does not specifically apply to the acoustic monitoring accelerometers themselves, but a licensee review of surveillance history shows that the accelerometers have not been a contributor to any of the VMS channel failures observed to date. Moreover, a failure of the accelerometer could be observed during the monthly surveillance check of accelerometer resonance.

The proposed 24-month surveillance interval is well within the vendor recommendation for system calibration of every 5 years as referenced by the licensee. The Oyster Creek Nuclear Generating Station TS specifies an allowable outage time for the acoustic monitoring system and for the backup thermocouples. Based on the evaluation of surveillance test results performed by the licensee, the current TS AOT and minimum channels operable requirement provides adequate time for system adjustment or repair to support an extended surveillance interval of 24 months.

The primary (EMRV) and safety valve position (code safety) indicators, and the relief and safety valve position indicators (backup indication) as referenced in TS Table 4.13-1, Item 1, undergo a monthly surveillance check in addition to the 18-month calibration. The monthly checks are not being revised by the licensee and essentially overlap the 18-month refueling calibration test. Therefore, the staff agrees that the monthly surveillance checks will continue to provide assurance of system availability. The reviews of surveillance test

results by the licensee did not indicate any adverse trends in system operation. The TS requirements for AOT and minimum channels operable also support the proposed 24-month surveillance interval. It is expected that the licensee will continue to collect and evaluate the required data to ensure that the extended surveillance interval is appropriate for the referenced systems. Based on the above, the staff finds the proposed surveillance extension to 24 months for Table 4.13.1, Item 1, Primary and Safety Valve Position Indicator (primary detector), Relief and Safety Valve Position Indicator (backup indication), and Relief Valve Position Indicator (common header temperature element) to be acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, an environmental assessment and finding of no significant impact has been prepared and published in the Federal Register on January 23, 1991 (56 FR 2544). Accordingly, based upon the environmental assessment, we have determined that the issuance of the amendment will not have a significant effect on the quality of the human environment.

4.0 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 (3) the issuance of the amendment will not be inimical to the common defense and security nor to the health and safety of the public.

Dated: January 29, 1991

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