



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 88 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 letter dated June 28, 1985, GPU Nuclear (the licensee) requested an emergency amendment to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station (OCNGS). This amendment would authorize changes to Tables 3.13-1 and 4.13-1, Accident Monitoring Instrumentation, of the Appendix A Technical Specifications (TS) related to the backup relief valve position indicator for each relief valve. The changes will allow thermocouples (TE 65A and TE 65P) on the relief valve's common discharge header to be substituted for an inoperable thermocouple (TE210-43V, W or X, and TE210-43Y or Z) immediately downstream of the relief valves which have up-to-now been the only backup relief valve position indicators. The primary relief valve position indicator is an acoustic monitor.

At 3:00 p.m., Monday, June 24, 1985, a backup relief valve position indicator (TE210-43W) was declared inoperable due to low and erratic operation. This placed the facility in a TS limiting condition for operation (TS 3.13.A.2) which requires GPU Nuclear (the licensee) to return this thermocouple to operable status within 7 days or place the reactor in cold shutdown within the following 24 hours. Because the thermocouple is located at the discharge line of the relief valve inside containment, repair of the thermocouple would require a plant shutdown to enter the containment and repair the thermocouple. The plant is at 100% power.

To avoid the transient condition of a shutdown and a subsequent restart, the licensee proposed an alternate means to maintain backup relief valve position indication using an existing thermocouple in each of the two common discharge headers from the five relief valves. TS 3.13.C will require the licensee to repair the inoperable thermocouple "prior to startup following the next cold shutdown." The licensee's next scheduled cold shutdown is October 1985.

2.0 BACKGROUND INFORMATION

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By our letter dated September 13, 1979, and requirements established as a result of our review of the Three Mile Island (Unit 2) accident to all operating nuclear power plants. Certain of these requirements, designated Lessons Learned Category "A", included Section 2.1.3.a of NUREG-0578 dated July 1979, Direct Indication of Valve Position.

Our evaluation of the licensee's compliance with these Category "A" items was attached to our letter to the licensee dated March 29, 1981, as part of Amendment 54 which incorporated Tables 3.13-1 and 4.13-1 into the TS.

Subsequent to these actions, the licensee has experienced a failure of a component of the relief valve position indication system that, under present requirements, will require the plant to shutdown for containment entry and repair of the component. The licensee has determined that sufficient diverse instrumentation remains operable so as to make this shutdown for repair unnecessary at this time.

3.0 EVALUATION

Our requirements for installation of a reliable position indicating system for relief valves were based on the need to provide the operator with a diagnostic aid to reduce the ambiguity between indications that might indicate either an open relief valve or a small line break. Such a system did not need to be safety grade provided that backup methods of determining valve position are available.

The licensee has proposed changes to TS Tables 3.13-1 and 4.13-1 to add requirements on existing thermocouples not previously referred to in these tables. These additional thermocouples are located downstream of the failed thermocouple, in the relief valve discharge headers.

The purpose of this change request is to allow the thermocouples in the discharge headers to be utilized as backup indications of a stuck open relief valve. Although these thermocouples do not provide a direct indication of a specific relief valve's position, when utilized with other existing instrumentation, they will provide positive confirmation of a specific relief valve's position status. As the use of these thermocouples provides an indirect indication of relief valve position, and thus does not exactly meet the criteria of NUREG 0578 for direct position indication, consideration was not previously given to giving credit for their usage. However, the licensee's recent analysis presented in its June 28, 1985, submittal indicates that they can be used to verify relief valve position, in a manner equivalent to that provided by the individual relief valve discharge line thermocouples. The relief valve position indicator backup thermocouple read out outside the control room; the thermocouples on the common discharge header read out in the control room.

The licensee's amendment request describes the results of their analysis. In their evaluation they note that, because the header thermocouples have not been previously used as substitutes for the relief valve backup indicator thermocouple, channel calibrations have not been performed on them. Because containment entry is required to do such a calibration, the licensee has proposed increasing the channel check frequency instead. Calibration of a thermocouple is meaningless because the gain is fixed. Thus calibration is only a check against an independent standard at several points instead of against similar devices at a single point. Consequently calibration of the "new" thermocouple is not required until the next plant cold shutdown.

In addition to consideration of the licensee presentation on this issue, the staff is in the process of publishing our Safety Evaluation (SE) on Reactor Vessel Water Level Instrumentation for this plant. The staff has concluded in that review that the density compensated fuel zone instrumentation provides improvements that reduce the level indication errors caused by high drywell temperatures. There is also the instrumentation to indicate rising torus pool water temperature due to discharges from the relief valves. Therefore, this instrumentation can be relied on to give an indication of loss of coolant through an open relief valve.

As a result of having determined the adequacy of existing instrumentation for reactor vessel water level, containment temperature, and primary (acoustic) relief valve detectors; and having reviewed the licensee's evaluation of the proposed changes, the staff concluded that the proposal constitutes a change in location of a simple sensor and a relaxation of calibration requirements for the relocated sensor until the next plant cold shutdown. Since analysis has shown that the proposed substituted thermocouples can be used to verify relief valve position in a manner equivalent to that provided by the individual relief valve discharge line thermocouples, the staff concludes that the licensee's proposed change is acceptable.

3.1 Findings of Emergency Warranting An Amendment Without Notice

Without this amendment, the licensee will be required to shut down the plant on Monday, July 1, 1985. At 3:00 p.m., Monday, June 24, 1985, a backup relief valve position indicator (thermocouple TE210-43W) for one of the five relief valves was declared inoperable due to a low and erratic indication. The staff had discussions with plant personnel on the inoperable thermocouple on June 25, 1985. The inoperable thermocouple is located at the discharge line of the relief valve inside containment and the repair of the thermocouple would require a plant shutdown to enter the drywell. The licensee contacted the staff on June 26, 1985, to discuss the licensee's proposal to amend the TS to provide for an acceptable backup to the inoperable thermocouple until the next cold shutdown when TS 3.13.C will require the licensee to repair the inoperable thermocouple before restart from the cold shutdown. The licensee requested the proposed license amendment in its letter of June 28, 1985. The licensee stated in its letter dated June 28, 1985, that there had been no prior indication that the thermocouple's performance was questionable until its behavior was observed on Monday, June 24, 1985. The NRC Resident Inspector at Oyster Creek agreed with the licensee's characterization of the thermocouple's questionable performance. The staff has reviewed the emergency circumstances associated with the licensee's request and determined that, in accordance with 10 CFR 50.91(a)(5), a valid emergency situation exists. The staff believes that the licensee made a timely application and did not fail to seek this amendment earlier in order to create the emergency and take advantage of the emergency provisions.

3.2 Final No Significant Hazards Consideration Determination :

The relief valve position indication incorporated in the TS in Amendment 54 dated March 29, 1981, was to address TMI-2 Lessons Learned Category "A" requirement 2.1.3.a in NUREG-0578 dated July 1979. The staff's evaluation in its SE for Amendment 54 stated that its requirements for installation of a reliable position indicating system for relief valves were based on the need to provide the operator with a diagnostic aid to reduce the ambiguity between indications that might indicate either an open relief valve or a small line break.

In its letter dated June 28, 1985, the licensee has stated that the existing thermocouple in each of the two common discharge headers downstream of the relief valves has sufficient sensitivity to be a substitute for the inoperable backup relief valve indicator thermocouple immediately downstream of its relief valve. The backup thermocouple is closer to the relief valve than the thermocouple in the common discharge header and would be more sensitive; however, the licensee states that header thermocouples should provide an indication of less than 0.1% of rated relief valve steam flow. The relief valve position indicator backup thermocouples read out outside the control room; the thermocouples on the common discharge header read out in the control room.

In short, the common discharge header thermocouples should provide backup relief valve position indication essentially equivalent to that provided by the now inoperable backup thermocouple which the common discharge header thermocouple would replace. (In addition to this header thermocouple, there is torus pool water temperature indication--the relief valves discharge to the torus pool--and reactor water level indication in the control room. A significant loss of coolant through an open relief valve would be indicated by rising torus pool water temperature and falling reactor water level until alarm setpoints were reached.) Therefore, authorizing the use of the common discharge header thermocouples as a substitute for an inoperable backup relief valve position indicator thermocouple (1) does not involve a significant increase in the probability or consequences of a previously evaluated accident, (2) does not create the possibility of a new or different kind of accident from any accident previously evaluated and (3) does not involve a significant reduction in a margin of safety. Based on this, the staff concludes that the requested action does not involve a significant hazards consideration.

3.3 State Consultation

In accordance with the Commission's regulations, consultation was held with the State of New Jersey, Bureau of Radiation Protection, by telephone on June 26 and July 1, 1985. The State of New Jersey expressed no concern over the licensee's proposed amendment. No other comments were solicited or received. A notice of the proposed amendment was not published in the Federal Register due to the lack of sufficient time for public comment prior to the Monday, July 1, 1985, date when the amendment had to be authorized to prevent the plant from shutting down.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendment involves 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 made a final finding that this amendment involves no significant hazards consideration. Accordingly, this amendment meets 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 this amendment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) the amendment does not (a) significantly increase the probability or consequences of an accident previously evaluated, (b) create the possibility of a new or different kind of accident from any previously evaluated or (c) significantly reduce a safety margin and, therefore, the amendment does not involve significant hazards considerations, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ACKNOWLEDGEMENT

This Safety Evaluation has been prepared by R. Scholl and J. Donohew.

Dated: July 1, 1985