



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 148

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

INTRODUCTION

By letter dated December 7, 1990, the licensee of Oyster Creek Nuclear Generating Station, GPU Nuclear Corporation, submitted a request for a Technical Specification (TS) change that would allow them to drain the 15,000 gallon emergency diesel generator (EDG) fuel oil storage tank for the purpose of inspection during the upcoming (13R) refueling outage. This TS change will also permit periodic inspection and/or repair as required during periods of cold shutdown or refueling. Draining the tank will cause the EDGs to become inoperable in violation of Technical Specification 3.7. For these reasons, the licensee is proposing that the Technical Specifications be revised to allow the temporary installation of tanker trucks with a capacity of not less than 14,000 gallons of fuel oil.

The tanker(s) would be connected by temporary flexible hosing to a tee and to the EDG fuel oil filling station. Valve alignment would allow a direct flow path from the tanker(s) to each set of EDG transfer pumps. The tanker trucks' fuel alignment up to and including the EDG filling station would not be seismically qualified or missile protected.

2.0 EVALUATION

The general objective of TS 3.7 is to assure an adequate supply of power with at least one active and one standby source of power available for operation of equipment required for a safe plant shutdown, to maintain the plant in a safe shutdown condition, and to operate the required engineered safety feature equipment following an accident. TS 3.7.C.4 states that for the EDGs to be considered operable there shall be a minimum of 14,000 gallons of diesel fuel in the EDG fuel storage tank. This required minimum of 14,000 gallons is based on a loss of offsite power event coincident with a loss of coolant accident (LOCA). This figure assumes an initial start of both diesel generators with a curtailing of loads not required after the first 8 hours of the event. The following loads would be shed: (1) one core spray pump, (2) one core spray booster pump, (3) one control rod drive pump, (4) one containment spray pump, and (5) one emergency service water pump. With these loads taken off at 8

hours after the incident a fuel oil supply of 12,840 gallons would be needed for a three day supply.

The function of the EDGs is to provide an onsite independent standby power source for essential bus sections 1C and 1D. These essential buses provide power to plant equipment, such as the spent fuel pool cooling and RBCCW systems, necessary to reach and maintain safe shutdown. Offsite power must be reestablished or an EDG fuel oil resupply must be established within the 3 day fuel limit in order to provide continued power to these essential buses.

The proposed change to TS 3.7 would only apply during periods of cold shutdown or refueling with the reactor cavity flooded above elevation 117 feet with the spent fuel pool gates removed, or with all fuel in the spent fuel pool and the spent fuel gates installed. In addition, the plant will be required to be placed in a configuration in which core spray system operability is not required. These requirements would ensure that either communication exists between the reactor cavity and the spent fuel pool with the reactor cavity flooded or that all fuel is in the spent fuel pool.

Since the tanker trucks and associated connections are not seismically or missile protected, it is possible that they may be lost during an earthquake or tornado. Under these conditions both onsite and offsite AC power may be lost. This would result in a loss of the spent fuel cooling system, the core spray system, the containment spray system, the emergency service water system and the RBCCW system. In addition, secondary containment will be degraded because of the unavailability of the standby gas treatment system. This would require the plant to take actions per TS 3.5.B.1.1 and place the plant in a configuration in which environmental releases cannot occur. The actions specified under 3.5.B.1.1 are as follows:

- (1) Cease fuel handling operations or activities which could reduce the shutdown margin (excluding reactor coolant temperature changes).
- (2) Cease all work on the reactor or its connected systems in the reactor building which could result in inadvertant releases of radioactive materials.
- (3) Cease all operations in, above, or around the spent fuel storage pool that could cause release of radioactive materials.

Loss of all AC power would also result in loss of power to the refueling bridge and the fuel hoist. In the event that a fuel bundle is in transit, the safety brake consists of a solenoid and pawl ratchet which will lock the fuel grapple in place preventing the bundle from dropping into the core or spent fuel pool. Both the fuel bridge and fuel hoist are designed so that they may be moved manually without power. Therefore, a bundle in transit could be placed into the spent fuel pool and lowered into a rack following a loss of power.

With the plant configuration as stated above, the limiting safety concern is fuel decay heatup. FSAR Chapter 9.1.3.3 indicates that if all fuel pool cooling is lost with the maximum abnormal heat load core unloaded in the spent fuel pool and an initial pool water temperature of 90°F it would take 14.5 hours for the pool water to reach boiling temperature. It would take an additional 83.5 hours before the top of the storage racks would begin to be uncovered.

The licensee states that the oil truck manifold can be repaired and/or a fuel oil tanker obtained within 6 to 12 hours following an event. Chapter 9.5.4 of the FSAR, Diesel Generator Fuel Oil Storage and Transfer System, lists towns and cities within a 50 mile radius from which fuel oil can be obtained and verifies the 6 to 12 hour time for procurement of replacement fuel oil. All replacement parts for the tanker trucks' fuel alignment up to and including the EDG filling station are located on site. The pipes and connections have threaded fittings. This eliminates the need for welding and allows repairs to be made quickly. The licensee estimates that any repairs to the fuel alignment could be made within several hours.

Based on the above evaluation, the staff finds the licensee's proposal to use tanker trucks as a temporary means of supplying fuel oil to the EDGs to facilitate inspection and possible replacement of the 15,000 gallon diesel generator fuel oil storage tank 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 have been prepared and published in the Federal Register on January 23, 1991 (56 FR 2542). 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 common defense and security nor to the health and safety of the public.

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Dated: February 21, 1991